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Manuscripts and editorial correspondence relating to the regular quarterly issues of the REVIEW should be addressed to Paul T. Homan, Managing Editor of THE AMERICAN ECONOMIC REVIEW, University of California, 405 Hilgard Ave., Los Angeles 24, California.

OTHER DEPARTMENTS

GEORGE ERNEST BARNETT

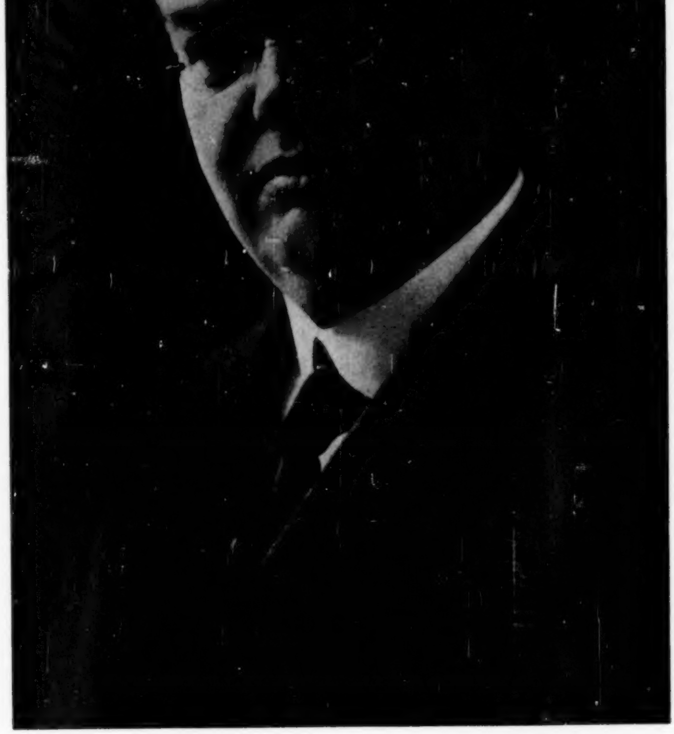
Thirty-fourth President of the American Economic Association, 1932

George E. Barnett was born in Cambridge, Maryland, February 19, 1873, and died in Baltimore, June 17, 1938. He received his A.B. degree at Randolph-Macon College in 1891 and his Ph.D. at Johns Hopkins in 1902. His alma mater awarded him the LL.D. in 1934. After serving successively as instructor, associate, and associate professor of political economy at Johns Hopkins from 1901 to 1911, he was appointed professor of statistics, which post he occupied until his death.

Professor Barnett had a faithful following. His teaching was vitalized by drawing upon his experiences in labor arbitration, service for government commissions, and association activities. In addition to the American Economic Association, he was a member of the American Statistical Association and the American Association for Labor Legislation. His presidential address at the 1932 meeting was entitled, "American Trade Unionism and Social Insurance."

Professor Barnett's changing interests were reflected in the character of his publications. In the early part of his career his interests were in banking and statistics but shifted later to the field of labor. His first book, on *State Banking in the United States,* was published in 1902, the year he received his doctor's degree. This work later developed into a contribution to the reports of the National Monetary Commission, 1911, with the title, *State Banks and Trust Companies Since the Passage of the National Bank Act.* In 1904 he edited *A Trial Bibliography of American Trade Union Publications* and was co-editor, with Jacob H. Hollander, of *Studies in American Trade Unionism,* 1906. *The Printers,* A Study in American Trade Unionism, constituted Number 3 of the American Economic Association "Third Series," published in 1909. In 1914, he was in charge of investigations in the field of collective bargaining for the United States Commission on Industrial Relations. His other publications include *Mediation, Investigation, and Arbitration* (with D. A. McCabe), 1916, and *Machinery and Labor,* 1926.

Number 34 of a series of photographs of past presidents of the Association.



George E. Barnett

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KNUT WICKSELL—A CENTENNIAL EVALUATION

By CARL G. UHR*

Johan Gustav Knut Wicksell was born on December 20, 1851 in Stockholm to a Swedish middle-class family. He died in his 75th year of life on May 3, 1926. During his years of graduate study, 1880-90, and his career as a creative economic theorist, 1890-1915 being his most active period, he was a contemporary of Menger, Böhm-Bawerk, Walras, Marshall, Wagner, and Spiethoff, whose works, apart from those of his colleagues in Sweden, D. Davidson and G. Cassel, influenced his own development and thought in many ways.[1]

Wicksell's "student years" were unusually long.[2] Before he was appointed to the chair of political economy and fiscal law at Lund University in 1900, he was a mature man with a growing family, 49 years of age, and already a writer of renown who, apart from some important articles and tracts, had published three of the five volumes that con-

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[1] The writer is especially indebted to Professor Emeritus Emil Sommarin, Wicksell's successor in the chair at Lund University, for biographical information. Our account of Wicksell's career is based in part on private correspondence with Professor Sommarin, in part on his article, "Das Lebenswerk von Knut Wicksell," *Zeitschrift für Nationalökonomie*, Vol. 9 (1930-31), pp. 221-67, and mostly on two chapters in his recent, charming book, *Studenter och Arbetare* (Students and Workers), (Lund, 1947), where he relates Wicksell's rôle in the social reform movements both at Uppsala and at Lund Universities.

[2] Wicksell enrolled at Uppsala University in 1869 to study mathematics and physics; earned a B.A. degree in 1872 and later, 1885, a graduate degree, *philosophiae licentiatus*, in mathematics. Such degrees are given to advanced graduate students after comprehensive examinations in which, *inter alia*, preliminary drafts of their doctoral theses are evaluated. Usually such drafts are elaborated into finished form and another set of examinations ensue, resulting in the Ph.D. Wicksell went on instead with economics, in which, after study abroad, 1885-90, and further research in Sweden, he earned another *phil. lic.* at Uppsala, 1894, and his doctorate, 1895, on a thesis in the theory of tax incidence. The latter was incorporated as Part I of his work, *Finanztheoretische Untersuchungen* (Jena, 1896). Finally, 1899, he earned one more degree, *utriusque juris candidatus*, in "fiscal law." This was necessary for him in order to apply for a professorship in

stitute his major works.[3] Two circumstances contributed to the tardy materialization of his academic career, his relatively late introduction to economics in about 1880 from graduate study of mathematics (which latter he pursued until 1885 when he went abroad for five years to study economics at the universities of England, France, Germany, and Austria), and his early reputation for social and religious unorthodoxy. The latter made his appointment a hotly contested issue and a decided victory for academic freedom.

At Lund his career was very productive. He contributed a stream of significant articles mainly to the newly launched Swedish economic journal, *Ekonomisk Tidskrift,* and to certain German learned periodicals, and wrote the two volumes of his *Lectures on Political Economy.*[4] In 1916, on reaching mandatory retirement age (65) and pensioned status as a professor emeritus, Wicksell left Lund to return to Stockholm. From that time until his death, he devoted himself to a very busy life of writing in the learned and the daily press on the Swedish inflation problem occasioned by World War I, and to service on a series of government commissions of inquiry into Sweden's monetary and taxation problems.

I.—*Orientation and Method in Economics*

Although this sketch of Wicksell's life reveals very little about him that seems unusual other than a tenacious studiousness, the quality of his work as an economist was determined both by his early training in mathematics and by his youthful and life-long attachment to the social reform movement of the 1880's.

His mathematical background accounts for the form and organization of his writing, and often endows the latter with a very formal,

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economics, for at that time economics was offered as an elective subject by the Faculty of Law. Hence professors of that subject were expected to be well informed and to offer courses on the relation of economics to jurisprudence, especially relating to the fiscal institutions and activities of government. During most of these years Wicksell and his family existed on research grants by Swedish foundations and on what little his writing brought in.

[3] *Über Wert, Kapital und Rente* (Jena, 1893), an elegant mathematical treatment of static equilibrium theory, synthesizing the work of the Lausanne and the Austrian schools; *Finanztheoretische Untersuchungen* (Jena, 1896), an elaboration of his doctoral thesis into a lofty and speculative treatment of public finance; *Geldzins und Güterpreise* (Jena, 1898), translated, 1936, as *Interest and Prices,* his epoch-making treatise on monetary theory.

[4] *Lectures on Political Economy,* Vol. I, *General Theory* (first Swedish edition, 1901), a revision and elaboration of his earlier analysis in *Über Wert;* and Vol. II, *Money* (1906), an elaboration of *Interest and Prices.* Both volumes were translated 1934-35; we refer to them as *Lectures-I* and *Lectures-II.* They went through several editions, the latter with some revision, 1915, on points relating to the nature of monetary equilibrium.

abstract character. From mathematics he brought to economics a methodology he was convinced would supersede the sterile empiricism of the German historical school and expose beyond plausibility the doctrinaire extravagances alike of the harmony-economists and their Manchester followers and of their bitter opponents, the Marxist socialists.

This was the deductive method of successive approximation applied with telling effects by Cournot and Walras, whose works he held in high admiration. It permits the economist to abstract from confusing detail and interrelations and isolate the forces at work in simplified, hypothetical cases containing definite elements of the complex reality economic theory seeks to understand. Wicksell was convinced that pursuit of this method was indispensable for theoretical as well as practical progress in economics. It seemed to him that it, and it alone, gave promise of yielding the economist cogent hypotheses which he needs before he can fruitfully approach empiric data for verification or refutation of his theorems, and before he may offer guidance to or interpret the results of public and private economic policy.[5] This was also the reason he avoided statistical work, with the two exceptions of a brief sketch of a theory of index numbers, *Interest and Prices*, Chapter 2 and Appendix (which latter was omitted in the English translation), and a pamphlet, *Läran om befolkningen* (Theory of Population), 1910, in which he developed a method for forecasting the trend and composition of Sweden's population. In both cases he made a contribution, but, on the whole, he was inclined to concentrate on problems of pure theory and to leave to others the task of adapting and testing by practical application.

Few would deny that in his generation Wicksell was uncommonly successful in applying his mathematical method in almost all branches of economic theory. As was to be expected, it served him particularly well in static analysis, as in *Über Wert* and *Lectures-I*. There he was a master craftsman in deepening and extending received theory, in laying bare its limitations, in generalizing it by transforming and reconciling apparently contradictory analyses, such as those of Böhm-Bawerk and of Walras, into unified syntheses. Essential as this was for further progress, it was not here, not in the static equilibrium analysis, that his genius played its important creative rôle.

To the contrary, his greatness rests on the advance he made toward fruitful theoretical solutions of the problems of (1) capital accumulation, (2) the relations between distributive shares in conditions of net investment and technological change, and (3) monetary relations in a

[5] Wicksell's statements on "method" in economics were always brief; *cf.* the prefaces and introductions to his works, *Über Wert*, pp. i-xxi, and *Lectures-I*, pp. 1-11.

"pure credit" system. For all the progress he made in this sphere, which inevitably involved dynamic analyses, his method of successive approximation sometimes got in his way and kept him from making even greater contributions. The too static approximations he employed to deal with dynamic sequences prevented him, at times, from reaching certain insights which were attainable within the same problem-focus, and were discovered by his followers, Lindahl, Myrdal, and Ohlin.

If, however, his mathematical mode of thought determined the form and probably appreciably restricted the scope of his work, it did not detract from the far-reaching implications he was wont to draw from some of his formal demonstrations. Neither did it fetter that agile spirit of freedom and well-nigh prophetic sense of the possibilities of social reform that characterize his outlook and constitute the real meaning of his economic philosophy. Clues to the latter must be sought in the character of the man and in the circumstances and motives that attracted him to economics from other pursuits.

It is said that as a youth Wicksell, who, like most of his contemporaries, was brought up on the moral precepts of the state supported Swedish Lutheran Church, underwent a religious crisis from which he emerged an a-religious philosophical rationalist of the radical type. This tendency was reinforced by his studies and contacts in university life, especially in student activities relating to the social reform movement. In due course he became known not only for his intellectual acumen but also as a gifted speaker. As such he was elected chairman of the Student Corps at Uppsala, 1878-79. This in turn brought him invitations to lecture on diverse subjects to welfare and civic organizations. One of these occasions became a turning point in his life and led to his study of political economy in earnest.

In the spring of 1880 he was addressing a temperance organization on the causes and remedies for alcoholism. Among causes he pointed to the abject poverty and dreariness of home life for the majority of urban workers, a poverty reinforced by the arrival of more and more children. As a remedy he suggested it was up to the medical profession to perfect simple, safe methods of contraception to arrest excessive procreation, and to disseminate the knowledge and application of such methods. Had it not been for the fact that the substance of his lecture was reported in the daily press, Wicksell might calmly have returned to his mathematical studies. But as it was, what he had to say reached a wider, more articulate public. Since it offended against the mores of the times just as the Darwinian theory of evolution in an earlier day offended against theological dogma, the response was immediate and strong. He was criticized and reviled in the press by professors of medicine, clergymen, essayists, and editors. Overnight he

achieved the unenviable reputation of a "moral nihilist" and came to be regarded as the leader of a suspect small intellectual sect known as neo-Malthusians. He defended himself ably and with courage in articles and tracts, all of which added to his notoriety.

In this process he felt the need to make a more methodical study of population questions. So he made the acquaintance of D. Davidson, then a docent in economics at Uppsala. Davidson, who became his life-long friend, introduced him to Malthus by lending him his copy of the *Principle of Population.* From there it was but a short step for him to the study of classical economics in its entirety. This he pursued in conjunction with mathematics until 1885 when, as we have seen, he went abroad to study modern economics. Upon his return to Sweden, Wicksell not only resumed his advocacy of the neo-Malthusian principles he had defended a decade earlier, but also broadened his activity in behalf of the social reform movement.

II.—*Social Reform Program or Theory of Economic Development*

At the close of the 19th century, Wicksell was convinced that the world possessed few additional, unexplored, and unexploited natural resources that would permit continued, rapid growth in numbers without impoverishment. He also thought the industrial revolution and epoch-making inventions of that century represented a unique period in man's economic history, one not likely to be outdistanced by the technological progress to be expected during the 20th and later centuries. For these reasons he thought attainment of stationary population of optimum size[6] throughout the world to be the *sine qua non* for a prospective rise in the mass standard of welfare. Accordingly, he made this condition the basis for most of his speculations concerning the long run or the economic future.

However, granted a discernible tendency for population to become stationary at a size that is optimal in relation to the economy's resources and technology, Wicksell was optimistic about its future economic improvement, a process he was convinced would be hastened and made more harmonious by adoption of certain reforms his economic studies led him to advocate. This was implied in his statement that

> . . . the definition of political economy as a practical science is the theory of the manner of satisfying human needs which gives the greatest possi-

[6] He defined "optimum population" as a population of such size that its further increase involves a decrease in "social welfare," *Läran om befolkningen* (Theory of Population), (Stockholm, 1910), p. 42. His neo-Malthusianism recurs also in one of his most important tracts, *Socialiststaten och nutidssamhället* (The Socialist State and Contemporary Society), (Stockholm, 1905), pp. 34 ff., where he pointed out that the very substantial gains a socialist society may achieve by more effective resource utilization and income redistribution are threatened unless protected by a rational population policy.

> ble satisfaction to society as a whole, having regard for future generations as well as the present. . . . As soon as we begin seriously to seek for the conditions of the welfare of the whole, consideration for the interest of the proletariat must emerge; and from thence to the proclamation of equal rights for all is only a short step. . . . *The very concept of political economy, or the existence of a science with such a name, implies, strictly speaking, a thoroughly revolutionary programme.*[7]

His "revolutionary programme" contained at least four interrelated parts for a multiple attack on the major problems his analysis had uncovered: problems of (1) monopoly and imperfect competition, (2) inequality of income and wealth, (3) inequality of economic opportunity, and (4) economic instability associated with the trade cycle and with certain abberations of monetary policy and institutions.

A. *The Public versus the Private Sector of the Economy*

His program involved first a substantial expansion of the public sector of the economy, partly at the expense of the private enterprise sector, and chiefly in behalf of perpetuating for the future the freely competitive portion of the latter under more tenable and stable auspices.[8] Expansion of the public sector was in part to take the form of public ownership and operation of "natural" monopolies (public utilities) and also of "artificial" ones, or of "enterprises and industries showing unmistakable tendencies toward formation of cartels."[9]

Monopolistic enterprises should be acquired by local or national governments by properly compensating their private owners. But once acquired, Wicksell insisted they should be publicly operated to give consumers the full benefit of their realizable "economies of scale." This was to be achieved by a combination of taxes and a technique of pricing their output according to marginal unit cost. Their prices were to be reduced by trial and error, and their output and sales expanded according to elasticity of demand, up to an equilibrium point where the sale value of output increment sold after the last price reduction (*i.e.*, output increment times new lower price) exactly equals the increment in total cost of producing the extra output. Since marginal unit cost and price would in most such cases be less than average total unit cost on the corresponding total product, the resulting deficit should be met from taxation.

It is not certain that he would have applied this method universally,

[7] *Lectures-I*, pp. 3-4, italics supplied.

[8] *Finanztheoretische Untersuchungen*, p. viii.

[9] Wicksell's review of Pareto's *Cours* in *Zeitschrift für Volkswirtschaft, Sozialpolitik und Verwaltung*, Vol. 6 (1897), pp. 161-62 and also his article, "Riksbanken och privatbankerna" (The National Bank of Sweden and Private Banks), *Ekon. Tidskrift* (1919), Part II, pp. 177 ff., and *Finanztheoretische Untersuchungen*, pp. 125-38.

for he was aware that complications would arise in all but the simplest cases, but he did not stop to work them out. At any rate, by way of contrast, he thought it irrational for governments deliberately to operate public enterprises for profit as in the case of Prussia's state-owned railways. To his mind the *raison d'être* for public enterprises was to obtain a better allocation and utilization of the nation's resources than private monopoly offers, and not one of using them as engines of indirect taxation.[10]

Secondly, extension of the public sector of the economy was to take the form of a substantial increase in the variety and extent of social services. He considered social services as necessary and justified as a form of secondary or "social" distribution to compensate for income inequalities that arise in the course of primary or "functional" distribution to factor owners according to the marginal revenue productivity of productive factors. For, as he repeatedly said:

> On the whole it is a mistake to regard as obvious—as is so often done—that healthy persons capable of work must be able to live from their labor *alone*.[11]

His first concern among social services was for education. He not only wanted the government to make schooling "free" to the public at all levels of academic and vocational instruction, but also to provide subsistence grants for impecunious and worthy students. Further, he stressed the need for a broad program of social security legislation and for national health insurance. He would have devoted the proceeds of most of the progressive income and unearned increments taxes he advocated as support for these activities.[12]

B. *Reconstruction of the Fiscal System*

The second part of Wicksell's program called for revision of extant tax systems, mostly composed of indirect taxes, and for changes in the political conditions for determining national budgets and the revenue measures needed for their execution. Because of the outrageously regressive incidence of taxes in the 1890's, he urged decreased reliance on excise and tariff duties in the revenue system as a whole and adoption and development of progressive taxes on personal incomes, estates, and corporate profits, as well as a modification of the general property tax to capture an increasing share of "unearned" land value increments.

[10] *Finanztheoretische Untersuchungen*, pp. 104, 128 ff., 133-35.

[11] *Lectures-I*, p. 143; *Finanztheoretische Untersuchungen*, p. 146.

[12] On social security laws, see his articles, "Ålderdomskommittens betänkande" (Report of the Old Age Pension Committee), and "Resultatet" (The Result), *Ekon. Tidskrift* (1912), pp. 443-68; (1913), pp. 211-17; further, *Socialistaten och nutidssamhället*, pp. 28 ff., and *Progressiv beskattning* (Progressive Taxation), another tract (Stockholm, 1903), pp. 26 ff.

As for high sumptuary excises on liquor and tobacco, he argued for scaling them down to moderate rates and imposing consumer rationing instead, *i.e.*, a "liquor and tobacco control" system, to achieve more equitably the sumptuary ends, and improvement in public health and morals, that they were originally intended to serve.[13]

But tax reform, he realized, must be preceded by political reform to remove all property qualifications for the franchise. Hence he supported the movement for universal suffrage, aware that its achievement would shift political power from the minority of enfranchised property owners to the working class. To make possible an orderly evolution of political relations in this process, he insisted on special safeguards to protect the identity and integrity of political minorities from tyrannization by the majority. For minorities must be preserved to perform their vital task of criticism. The guarantees of a bill of rights were, in his opinion, not sufficient for this. It required more than that, namely, their effective inclusion in the system of representation. Hence he advocated an election system based on proportional representation.[14]

Thus it was both for political and for economic reasons that Wicksell supported the trade union movement and was anxious to extend "free" education to all. Trade unions seemed indispensable for the civic and democratic education of a politically inexperienced working class which suddenly might find itself in possession of national political power and might be maneuvered into perverting a representative, constitutional democracy into mobocracy that has it terminus in dictatorship.

Fully aware that even in a democracy with universal suffrage and proportional representation the potentially all-embracing fiscal power can be captured by narrow, sectional interests at the expense of the general welfare, Wicksell wanted to make doubly sure this would not happen. To that end he urged the following reform in matters involving budgets-and-revenues: (1) Budget proposals must always be accompanied by matching revenue or finance proposals so that expenditures are not approved without regard to the finance requirements they imply. (2) Budget and tax proposals, usually made by the administration and adopted as legislative agenda by simple majority vote in Parliament, must be alterable by amendment by any member or group in Parliament. And only those proposals that are approved by a "qualified majority," *i.e.*, two-thirds of the membership, are to be adopted and embodied in the final budget-and-revenue acts. According

[13] ***Våra skatter—Hvilka betala dem och hvilka borde betala?*** (Our Taxes Who Pays and Who Ought to Pay Them?), an important tract, issued by Wicksell under the pseudonym of Sven Trygg (Stockholm, 1894).

[14] ***Den politiska rösträtten och skatterna*** (The Political Franchise and Taxation), a tract, 1898; ***Finanztheoretische Untersuchungen***, pp. 123 ff.

to Wicksell, this was necessary both for reasons of equity and on the grounds of the marginal utility calculus.[15]

Following Adam Smith, he believed governments should only undertake functions (*a*) that are not served by private enterprise, and (*b*) that are not served as well by private enterprise. The citizens via their representatives in Parliament must decide what those functions are. Such decisions must rest on a marginal utility calculus comparing the utility of proposed services with the tax burden they imply. In Wicksell's opinion, functions proposed for government action which fail of two-thirds majority apporval were not likely to be clearly and unequivocally in the general interest even if supported by ephemeral, bare majorities. Furthermore, functions that are approved must be served to a determinate extent. This involves division of the total budget into separate activities in proportions that, again, must correspond to the current status and expression of the general interest. Finally, in spending for budgeted purposes, government confers general benefits on the public at large and also special benefits on certain segments of that public. Spending for law enforcement may yield only general benefits, but spending for a river improvement yields greater benefits to adjacent property owners than to others. In general, the qualified majority in Parliament must feel that the marginal utility of a proposed government service at least equals the tax burden it imposes to give it approval. If the proposed service yields only general benefits, it should preferably—because of diminishing marginal utility of income—be supported by taxes levied according to the ability principle. If it yields only benefits for some and not for other citizens, it should be supported by taxes levied according to the benefit principle. If it yields both general and special benefits, it should be financed by benefit- and by ability-taxes in the proportions its separate and general benefits bear to the total benefits it confers.[16]

As it happened, Wicksell lived to see some of the foregoing reforms introduced in Sweden. Universal suffrage was achieved during World War I. The growth of the trade union movement and the Social Democratic Party ushered in several of the tax reforms for which he had pleaded and extended social services considerably in the fields of education, social security, public health and health insurance. While his proposal of two-thirds majority approval of budget and revenue acts was not adopted at the national level, where, instead, other innovations of fiscal policy were evolved, it was adopted in principle by a number of provincial and municipal governments. By pointing out this we do not imply that Wicksell and his followers were solely or largely responsible for these reforms. Nonetheless, a certain credit is due him

[15] *Finanztheoretische Untersuchungen*, pp. 115, 117, 124, 137, 156-ff.

[16] *Finanztheoretische Untersuchungen*, pp. 83-84.

for having foreseen and pleaded for most of them a generation or more before they took place.

C. *Monetary Reform*

In the third place, Wicksell's reform program called for changes in monetary institutions and policy which, in principle, anticipated by almost fifty years the compromise between monetary nationalism and international exchange stability which has found expression in the International Monetary Fund.

At the institutional level he wanted to strengthen the credit control exercised by discount policy and open-market operations of central banks over private banks. Ultimately he visualized nationalization of the central bank in each country and its replacing private commercial banks by opening affiliates in every town and hamlet. Then he pleaded for abandonment of the gold standard and for effective demonetization of gold. This was to be done by freeing central banks from the obligation to settle payments balances in gold by their entering into international clearings arrangements with each other to redeem each other's notes and drafts at par and sell the same to the public at par. Further to immunize them from the vagaries of gold production and of gold influx and efflux in the course of foreign trade, he thought it necessary that they cease the free minting of gold and abandon the practice of buying and selling gold at fixed mint prices. The world price of gold would henceforth depend chiefly on industrial demand in relation to its supply.[17]

At the policy level, most of his life he thought the aim of central banks in regulating the supply of money, now bank credit money, should be price stabilization, *i.e.*, stabilizing the value of money in terms of the price level of consumption goods. The means to that end were to vary central bank discount rates in the same direction as the consumer price index, thus offsetting a sustained rise in the latter by high discount rates and credit contraction and counteracting its sustained decline by reversing the process. He was convinced that this policy should be pursued both internally and internationally. To the latter end he asked that an international commission of experts work out an international price index to be the guide line for the concerted discount policy of central banks associated in the international clearings union. But, to obviate breakdown of this scheme from the balance of payments disequilibria that various nations develop from time to time as indicated by persistent debit clearings for the nations in question, he urged that, subject to the consent of the central bank majority in the clearings union, they be permitted to adopt discount policies run-

[17] *Interest and Prices*, Chap. 12, and *Lectures-II*, Chap. III, Sections 6-G and 6-H, and Chap. IV, Sections 9 and 10.

ning counter to that of the majority, and, with the cooperation of the latter, to engage in international capital transactions, etc., until the causes of their payments disequilibria had been overcome.

Toward the end of his life, 1925-26, it is true that Wicksell, impressed with his colleague Davidson's penetrating theoretical attack on his price stabilization aim, and further impressed by the monetary upheavals of World War I, modified his emphasis on price stabilization. In the end he had to admit its inconsistency with the conditions of monetary equilibrium which his own analysis had done so much to bring to light. To supplement it, he groped for other, more complex criteria for monetary policy (reminiscent of D. H. Robertson as of 1926), a matter he was unable to resolve to his own satisfaction.[18]

Yet this did not lessen the penetration of his insight into the essential requirements for stable international monetary relations, namely, an institutional arrangement which yields substantially the same exchange stability that was the glory of the gold standard but at the same time provides flexibility where the latter was rigid, *i.e.*, provides an orderly procedure for revaluation of exchange rates when persistent payments disequilibria occur. How much clearer and how much more correct his insight into these relations was than that of most of his contemporaries can best be seen if we recall that Marshall argued for a combination of the symmetallic standard, application of bank rate to restrain activities of speculators, and a tabular standard of value for long-term credit.

D. *Countercyclical Credit Policy*

The fourth part in Wicksell's program was addressed to the problem of economic instability. It called for government-supported extension of credit in times of depression to maintain a tolerable level of employment by inducing manufacturers to produce to stock when costs are low and to hold resulting inventories off the market until improvement of trade in recovery would make it possible to dispose of them at a gain.

He considered the trade cycle, as distinct from monetary crises (which he attributed chiefly to irrational criteria for monetary management under the gold standard), to be caused by the uneven and unpredictable movement of "real forces," particularly technological innovations and the associated jerky pace of investment in fixed real capital. This process, he thought, could be smoothed substantially by countercyclical production for inventory purposes. But the credit extension needed to finance the latter admittedly represented unusual risks. The

[18] *Cf.* his article, "The Monetary Problem of the Scandinavian Countries" originally written for *Ekon. Tidskrift* (1925), now translated and appended to *Interest and Prices*, pp. 199 ff.

banks, committed to his price stabilization policy, could not be expected to carry it out unaided, especially not at the exceptionally low interest rates that must be offered to induce much additional borrowing for inventory production in depression. Hence the government must either supplement bank credit with public credit, or else underwrite the risks and losses the banks may incur in this process.[19]

III.—*Evaluation of Wicksell's Reform Program*

The foregoing account of Wicksell's social reform program should dispel any feeling of contradiction between the abstract treatment that dominates his major works and the concrete aims his analysis indicated to be attainable. Moreover, in broad features it reveals his theory of economic progress. For years he had planned to write a third volume of Lectures (*cf.*, *Lectures-I*, pp. 7-8) to deal with social economy or with the conditions of economic progress, as we might express it today. There he intended to investigate the application of economic theory and precept to the penultimate problem of the science—the maximization of social welfare—under assumptions involving radical change or reform of existing institutions. He never found the energy to complete this task as a systematic exposition. Yet, as we have seen, he left behind enough fragments in his books, his tracts and articles, to give us his vision of the future more rational, more stable political economy.

Thus, in a greater measure than his celebrated contemporaries, Wicksell emerges as a theoretical apostle of the "mixed economy." He labored, more fundamentally than others, in the tradition of J. S. Mill, whose famous dictum seems to have dominated his outlook:

> . . . the Laws of Production of wealth partake of the character of physical truths. There is nothing optional or arbitrary in them. It is not so with the Distribution of wealth. That is a matter of human institution solely.[20]

Without sacrificing, indeed while emphasizing, the all-essential rights and freedoms of the individual, Wicksell pointed out clearly some of the paths whereby society may advance in an orderly fashion toward a more nearly optimal allocation of resources, greater income equality, effective equality of opportunity, increasing security and enhanced material welfare. For the system he delineated, for a society with a population of optimum size, a system of public and freely competitive private enterprise, guided by his conception of rational economic policy, gave promise of greater economic stability than prevailed in his own day. It was not a case of his system being designed to eliminate all economic

[19] *Lectures-I*, "Note on Trade Cycles and Crises," pp. 209-14.

[20] J. S. Mill, *Principles of Political Economy*, Ashley edition, pp. 199-200.

fluctuation, but the behavior of the economy could be expected to be such that average rate of output would be considerably closer to full capacity rate of production than in the past. And its productive capacity could also be expected to continue increasing with the progress of private and social investment and improvements in technology, for the reforms he advocated would not have impaired the inducements for these activities.

It is, of course, easy to criticize his vision of economic progress, especially with the benefit of hindsight. It is clear now that he placed too great reliance on the adjustment powers of the interest rate mechanism, that he made inadequate allowance for risk and uncertainty as impediments to investment, that he was not fully aware of the impact of large-scale deficit finance and huge public debts on central bank powers of monetary management. This and more can be said against his vision. But then we must remember that his writing largely pre-dates the fateful year 1914. He could not foresee the problems that have come to afflict a society which has exposed itself twice to the holocaust of total war. Who will gainsay that his reliance on interest rate variation and on counter-cyclical production for inventory purposes may not have been more effective than they now seem to most of us in preserving a tolerable degree of economic stability if the pre-1914 society had continued to evolve in peace? And if it had applied but a fraction of the resources and ingenuity it wasted on warfare to the social reforms he advocated?

For all that, Wicksell's greatness as an economist rests much more on his creativeness as a theoretician than on his views concerning economic development. His stature as a theoretician is in turn attributable to the vivid imagination with which he tackled intractable problems, and to the rigorous scientific method he applied in his work. As a result, several of his contributions are of value still, not so much because of the particular conclusions he formulated, for they have mostly been superseded by subsequent work. It is rather because of the highly fruitful points of departure he found from which to approach problems, and because of the flexible framework of analysis he developed, which afforded a wide perspective that enabled others to make further progress.

IV.—*Contributions to Economic Theory—Static Analysis*

A. *The Marginal Productivity Theory of Distribution*

Considering the state of economic theory as of 1890 it is not surprising that Wicksell sensed the need for a synthesis. With the Austrians, the British neo-classicists, and the Lausanne schools sharing related orientations in value theory but having divergent views on production, capital, and distribution, the time seemed ripe to him to

attempt a consistent synthesis between these approaches. In substance this is what Wicksell achieved in *Über Wert* by using the marginal-utility-marginal-productivity theories of Jevons and Menger, adding to these the derived Böhm-Bawerkian analysis of capital, and fusing the product within a Walrasian framework of general equilibrium to reveal the multiple causal interrelations of the theoretical edifice. In this process he became a founder of the marginal productivity theory of functional distribution.

Chronologically Wicksell was the first, in 1893, to demonstrate the "product exhaustion theorem," or the determinacy of functional distribution on the basis of product-exhaustion by imputation of distributive shares to cooperating factors of production in terms of their respective marginal productivity. However, he was content to let the credit for the "theorem" go to Wicksteed who, independently, adduced a more systematic demonstration of it in *Coordination of the Laws of Distribution* the following year.[21]

Wicksell's use of the marginal-utility-productivity theory calls for comment. While he stressed the limitations of marginal utility theory (the impossibility of interpersonal utility comparisons, the difficulties the marginal calculus encounters in commodities in joint demand, in goods produced in joint supply, and with goods that are large and indivisible relative to the individual's budget), he defended it decisively against its critics in an article, "Zur Verteidigung der Grenznutzentheorie," *Zeitschrift der gesammten Staatswissenschaften* (1900), pp. 577 ff. As we have seen, he was also at pains to extend its scope more directly to public finance as the underpinning for his system of "equitable taxation." At the same time he wanted to purify this theory from certain apologetic overtones that had become attached to it.

It is clear that the general equilibrium that arises in perfect competition represents an economic optimum of some sort, especially from the standpoint of production. Given the distribution of income, consumers maximize utility positions relative to ruling prices by spending so as to obtain equi-marginal utility per dollar. Producers maximize profit positions (at zero net profits in the long run) by arranging plant to optimal scale, producing the output quantities for which least average costs and marginal costs equal demand price. To do this, they use factors in proportions and quantities such that, given their prices, they obtain equi-marginal value (or revenue) product per dollar of factor outlay.

Walras and later Pareto, not to mention others (J. B. Clark, for

[21] For a verbal statement of the theorem, see *Über Wert*, pp. xii-xiii; Wicksell's mathematical treatment, *ibid.*, pp. 121-28, and *Lectures-I*, pp. 126 ff. This and Wicksell's rôle in the polemic about the theorem is expertly treated in G. J. Stigler's *Production and Distribution Theories* (1941), Chap. X, and Chap. XII.

instance), concluded that the foregoing equilibrium represented maximization of social welfare.[22] Wicksell objected that since interpersonal utility comparisons can not be made, it is impossible to ascertain which of many possible production-consumption equilibria indicate maximum social welfare. Secondly, the consumer maximization that arises in free competition is relative to (1) the competitively established structure of prices and to (2) the pre-existing distribution of income and wealth. It constitutes no guarantee that a different distribution, for instance, one favoring low income groups and achieved by authoritarian imposition of a set of uniform prices, will not yield a greater quantum of utility. For, as he pointed out:

> . . . in normal cases there can always be found a system of uniform prices at which exchange will produce a larger sum of utility than at competitive prices.[23]

Yet, these reservations notwithstanding, Wicksell remained at least a quasi-economic liberal in questions of intervention in "the system of competition" on behalf of increasing social welfare, for

> . . . an encroachment on free competition, if it is . . . (to increase social welfare) . . . must be effected *in the right direction.* Unrestricted liberty is infinitely to be preferred to a misguided system of restriction on competition.[24]

However, if this could be said by way of qualification of the marginal-utility-productivity theory on its home grounds, the stationary society of universal free competition, then far greater qualifications were in store for it in the real world where "our assumption of free competition is and can only be incompletely realized."[25]

B. *Theory of Price in Imperfect Competition*

Wicksell made only slight headway with the theory of imperfect competition because of his inadequate concept of the firm.[26] Nonetheless, using retailing as a form of imperfect competition short of

[22] L. Walras, *Abrégé d' Éléments d'Économie Politique Pure* (Paris, 1938), p. 105, from which a passage is quoted in *Lectures-I,* p. 74, note; V. Pareto, *Manuel d'Économie Politique,* pp. 354 ff., 617-31; K. Wicksell, *Über Wert,* pp. 48-50, *Lectures-I,* pp. 72-83, and his reviews of Pareto's works in *Zeitschrift für Sozialpolitik und Verwaltung,* Vol. VI (1897), pp. 159 ff., and Vol. XXII (1913), pp. 132 ff.

[23] *Lectures-I,* p. 80.

[24] *Ibid.,* p. 81.

[25] *Ibid.,* p. 72.

[26] In free competition all his firms were of optimal scale, and in simple monopoly he viewed them as entities for maximizing net revenue by making the proper output adjustment to demand functions of known elasticity. Yet he was aware of the connection between "economies of scale" and decline of competition, an insight he made little use of in particular equilibrium analysis.

monopoly, he anticipated some of the modern theory of monopolistic competition by showing that free entry in such conditions results in overcrowding—too many, less than optimal-scale retail firms for the good of retailers and their customers alike. He also attributed the existence of fairly fixed, differentiated retail markups to differentiation of firms, since consumers, unable accurately to judge quality of complex merchandise, become dependent on particular retailers as "buyer experts." Hence inelasticity of demand for retail services increases in proportion to the degree of consumer ignorance.[27]

Consideration of imperfect competition led him to delve into isolated exchange where his efforts led to an advance toward the theory of bilateral monopoly. At first (*Über Wert,* pp. 36 ff.), his position was similar to Edgeworth's—exchange ratios and quantities of goods traded at isolated barter are indeterminate within limits of the "contract curve." Decades later, 1925, in his review of Bowley's *Mathematical Groundwork for Economists,* he sensed an error in this theory. He went on to show that if a factor monopolist dominates in bargaining with an end-product monopolist who can not apply monopsony power, then even in bilateral monopoly, factor- and output quantities and prices are determinate. The factor monopolist attains a "real" maximum, and the end-product monopolist only a "relative maximum of normal returns." Thus the charmed circle of indeterminacy of bilateral monopoly was broken, albeit Wicksell was wrong, as Bowley pointed out in his reply, in holding that the converse case of end-product monopoly dominance was indeterminate.[28]

C. *Theory of Capital and Interest*

Wicksell's most important contribution to static analysis was his revision and reconstruction of Böhm-Bawerk's capital theory. He restated the latter solidly and lucidly on the basis of a stationary state and generalized it by (1) including land in its treatment, (2) introducing into it the assumption of variable production coefficients or factor proportions, and (3) by extending it beyond the confines of a one-commodity economy into a multiple-commodity general equilibrium treatment. As a result, Böhm-Bawerk's cumbersome trinitarian (the "three grounds") interest explanation was transformed into an explicit theory of interest as the marginal productivity of waiting, coordinate with the marginal productivity theories of wages and rent. In this

[27] *Lectures-I,* pp. 86-88.

[28] Wicksell's review, *Ekon. Tidskrift,* 1925, was translated as "Mathematische Nationalökonomie" for *Archiv für Sozialwissenschaft,* Vol. 58 (1927), pp. 252-81. Bowley's reply and re-analysis is found in "Note on Bilateral Monopoly," *Econ. Journal,* Vol. XXXVII (1928), pp. 651-65. For a systematic treatment of this entire topic, see W. Fellner, *Competition Among The Few* (New York, 1949), Chaps. IX and X.

connection, Wicksell also arrived on highly agnostic premises at the conclusion that saving is likely to be interest-inelastic.[29]

Yet, his chief innovation in capital theory was his elaboration of a new, consistent concept of capital structure, actually a method of quantifying real capital both (1) as a determinate time-structure of production capable of variation in two dimensions, "width" and "height," and (2) as a quantification in value terms, a conception he referred to as "the stratification of capital through time" (*Lectures-I*, p. 151). He developed it after first using Böhm-Bawerk's "production period," and later an improved, alternate construct of his own, the "weighted average investment period" (*Lectures-I*, pp. 172 ff.), which, however, was less clear than his structure concept.[30]

The value of Wicksell's formulation was that it made the impact of capital accumulation on the national dividend and on the relations of distributive shares more accessible than they were in earlier versions of "Austrian" capital theory and in "non-Austrian" conceptions of real capital as an aggregate of producers' goods. The essentials of this conception and of the insights it afforded may be sketched as follows.

In a perfectly competitive, stationary society, in equilibrium the quantity of real capital can be viewed genetically as consisting of labor-and-land inputs invested ("saved up") during past periods. The specific capital goods of which it is made up yield, "mature out," the services of their invested inputs in production over more or less long-time intervals or "maturation terms." Thus the capital structure can be expressed as (1) the number of invested inputs contained in it (or the number of such inputs required for its total replacement) times (2) the time-intervals such inputs must remain invested until they are used up, "mature their services," in production. Given the rates of wages, rent and interest, the value of the quantity of real capital can be obtained by multiplying these inputs by applicable wage and rent rates and by applying to each the rate of interest properly compounded for the maturation term each remains invested. Alternately, one can say that the value of a capital structure equals the sum of the properly discounted values of services its specific capital goods yield over future periods equal to their respective maturation terms.

Stationary conditions imply maintenance of the existing capital structure by replacement investment, which requires that a corresponding portion of society's total labor and land be thus "saved up" or invested in producing replacement goods, all its remaining labor-land being "current" factor services engaged in "direct" production of con-

[29] *Über Wert*, pp. 82-90; *Lectures-I* pp. 158 ff., 169, 171, 207, 209, 211 ff., and 241.

[30] The evolution of Wicksell's capital concept is readily traced in *Über Wert*, pp. 72-80, 93-94; *Finanztheoretische Untersuchungen*, pp. 29 ff.; *Interest and Prices*, pp. 122 ff., and *Lectures-I*, pp. 144-66, 172-84, 204.

sumption goods. If interest is 5% and real capital has a corresponding net marginal productivity, then since real capital is "saved up" labor-land, it follows that the marginal productivity of invested factor units must stand in the ratio of 1.05/1.00 to that of "current" factor units. And it is the lower marginal productivity of "current" labor-land that determines the rates of wages and rent.

In equilibrium, at 5% interest rate, the current gross marginal product of real capital, (*i.e.*, its "maturing" services), must for opportunity cost reasons be of a magnitude relative to that of labor-land input required for its replacement, of 1.05 raised by the power of an exponent expressing the maturation term (*e.g.*, in years) during which this current replacement input must remain invested before it, in turn, begins yielding services to production.[31] This was sometimes expressed by saying that capital goods of different maturation terms yield the services of their "oldest saved up" labor-land inputs, and that, in equilibrium, their respective net current yields must stand in a *compound rate relation* to each other, *e.g.*, net yields of .05, .1025, .1576 per unit for goods of one-, two-, and three-year maturity terms, respectively.

One additional property of real capital requires notice, namely, that current replacement input for long-maturity capital is a progressively smaller fraction of the current replacement requirement for the larger number of short-maturity capital goods that, taken in combination, have approximately the same yield. This means that if and when there is an advantage in shifting or converting some short-term into long-term investments, that advantage is reinforced by the fact that *after* the shift is completed, the total requirement of labor-land for replacement work is diminished.[32] Input units thus released from replacement production are then added to the "pool" of "current" factor units producing consumption goods, where they exert downward pressure on wages and rents since they increase the supply of such units, reducing their marginal productivity.

[31] Goods of one-year maturity term must have a current gross marginal product of 1.05 times, or per unit of, the corresponding replacement inputs; goods of two-year term, a current gross marginal product of $(1.05)^2 = 1.1025$ per unit of current replacement input; goods of three-year term, a gross marginal product of 1.1576 per unit of current replacement input and so forth. Deducting replacement, their respective net current yields or net marginal products are .05, .1025, and .1576 units.

[32] Three goods of one-year term each require 1.00 unit labor-land input per annum for current replacement. Their combined current replacement is 3.00 input units and their combined net current yield .15 units. One capital good of three-year term also requires 1.00 input units per annum for current replacement, and its net yield is .1576 units. *After* investment conversion to three-year goods is completed, the labor-land required for replacement is reduced by 2.00 input units per annum per new three-year goods created by the investment shift.

Now society becomes non-stationary in only one respect; its capital structure expands by net investment. This means that more units of labor and land, over and above those usually engaged in replacement work, are withdrawn from consumption goods production to make net new capital goods. This raises wages and rents as supply of "current" services is reduced and their marginal productivity rises, while supply of capital increases and its marginal productivity declines, perhaps by an absolute amount equal to 1% from 5% to 4%.

At first the capital structure tends to increase by *expansion in "width,"* which means that *net investment increases all its capital goods* of different maturation terms *proportionately.* The structure usually contains more units of short- than of long-maturity real capital, and a proportionate increase in all varieties then means a larger absolute increase in the former than in the latter. This *disrupts* the *compound rate relations* that existed between their current yields in the initial equilibrium *in favor of long-maturity capital.* Net yields were .05, .1025, and .1576 per unit before "width" expansion reduced them by an equal absolute amount to .04, .0925, and .1476 per unit for one-, two-, and three-year goods respectively. At these yields three-year and two-year goods are *relatively more profitable* than one-year goods, and this induces expansion progressively in the "height" dimension of the structure.

"Height" expansion means that (1) *further net investment is concentrated* more and more *on long-maturity goods, and* (2) *some pre-existing short-term investments are shifted* (by non-replacement and transfer of the corresponding current replacement inputs) *to long-maturity goods.* Accordingly, some labor and land previously engaged in replacement production is released to augment the supply of "current" factor services and exert counterpressure to the wage and rent rise that occurred during "width" expansion. Thus wages and rents recede somewhat and marginal productivity of short-term capital, hence interest, rises somewhat, perhaps from 4.0 to 4.5%. When all penultimate adjustments of numbers of capital goods of different maturity terms in the structure are made and net investment ceases, fully restoring equilibrium, then current net yields of capital goods of different terms will again exhibit the proper compound rate relation to each other, now of .045, .092, and .141 per unit for goods of one-, two-, and three-year terms, respectively.

This was the essence of Wicksell's insight into capital accumulation. Taken in conjunction with his analysis of "cumulative processes" in monetary theory, it gave rise to "capital shortage and vertical maladjustment" theses of business cycles, first propounded by one of his followers, G. Åkerman, in 1924, and later, more elaborately, by Pro-

fessor F. A. von Hayek.[33] While these theses were stimulated by, and were in a sense a logical outgrowth of Wicksell's work, we must emphasize that he did not share this perspective on business cycles, nor is it likely he would have concurred in the policy recommendations to which they gave rise.

V.—*Contributions to Economic Theory—Dynamic Analysis*

A. *Distributive Shares and the National Dividend in Conditions of Capital Accumulation and Technological Change*

Wicksell was the first among modern theorists to subject the question of relative and absolute distributive shares to rigorous analysis. His work was stimulated by reflections on Ricardo's famous chapter "On Machinery" and by Böhm-Bawerk's emphasis on lengthening the production period as a defense mechanism brought into action by rising wages.[34] Wicksell's treatment assumed a perfectly competitive society with a constant labor force and quantity of natural resources. His demonstrations showed the impact on the national dividend and on distributive shares of (1) net investment without technological change, (2) technological change without net capital formation, and (3) technological change and net capital formation proceeding chiefly in the "height" dimension of the structure. His conclusions may be expressed as follows.

Capital expansion in "width" and later, progressively, in "height," always increases the national dividend by the social marginal product of new capital. What happens to the distributive shares of capitalists, on the one hand, and of laborers-and-landowners, on the other, depends on the degree of capital intensity society has achieved, and on the downward (negative) acceleration of the marginal productivity of real capital. If capital intensity is small, both the relative and absolute share of capitalists rises, while the absolute share of labor-land also rises, though more slowly. With slight capital-intensity marginal productivity of capital can not have proceeded far into the stage of diminishing returns, and so the interest rate declines only slightly with net accumulation. But, *ceteris paribus*, accumulation eventually makes society capital intensive. Then the relative and absolute shares of labor-land increase; the relative share of capital declines, its absolute share continuing to increase slowly.

His analysis of technological change in the absence of net accumulation was a refutation of the Ricardian dictum that adoption of labor-

[33] G. Åkerman, *Realkapital und Kapitalzins*, Vol. II (Stockholm, 1924), and F. A. von Hayek, *Prices and Production* (1934), *Profits, Interest, and Investment* (1939), and *The Pure Theory of Capital* (1940).

[34] *Über Wert*, pp. 101-5; 113-16, and *Lectures-I*, pp. 133-44; 163-66.

saving machinery proceeds regardless of whether the national dividend declines in the process, as long as its adoption is profitable to entrepreneurs. Wicksell showed that technological improvement always increases the national dividend as long as perfect competition prevails. For it increases the average productivity of the factors though not necessarily the marginal productivity of all factors equally. For instance, it may increase that of land more than that of labor and lead to much labor displacement and hardship as land is progressively substituted for labor. But labor displaced by conversion of acreage from grain to pastoral agriculture will offer itself at competitively lower wages and so make grain farming more profitable than it was. This prevents full conversion of acreage into sheep-runs and intensifies cultivation on remaining grain farms. *Ergo*, the national dividend increases and contains more mutton as well as bread with, probably, some wool for export. Yet, he conjectured, most inventions raise the productivity of both labor and land and thus prevent a serious decline in labor's absolute share.

As net accumulation proceeds, labor and land constant, it proceeds progressively in the "height" dimension because long-maturity investments become *relatively* more profitable as wages and rents rise. This retards but can not stop the rise in wages and rent and the decline in capital's relative share. However, if at the same time some technological improvements occur, then, as he said:

> . . . the position is different *where*, as may easily happen, *some technical invention renders long-term capital more profitable (absolutely) than previously.* The consequence must necessarily be—so long as no further capital is saved—a diminution in the "horizontal dimension" and an increase in the "vertical dimension," so that the quantity of capital used in the course of the year will be reduced; an increased quantity of current labor and land will consequently be available for each year's direct production; and, although this need not necessarily cause their marginal productivity and share in the product to be reduced—since the total product has simultaneously been increased by the technical discovery—yet a reduction may clearly result. *The capitalist saver is thus, fundamentally, the friend of labor, though the technical inventor is not infrequently its enemy. . . . That the transformation of circulating into fixed capital, i.e. the change from short-term to long-term investments, may frequently injure labor is beyond doubt.*[33]

Thus technological change, if it enhances the marginal productivity of long-term investments *absolutely*, is likely to reverse the downward trend of the interest rate and the rise in wages and rents that otherwise follow from net accumulation with labor and land constant.

[33] *Lectures-I*, italics supplied, p. 104.

The foregoing shows clearly that Wicksell anticipated by almost three decades several of the conclusions of J. R. Hicks in *Theory of Wages* (1932). Hicks acknowledged his indebtedness to Wicksell's work. To see how close the connection is, one need only recall Hicks's suggestive theory of inventions. It strikes us that Hicks's induced (labor-saving) inventions that would have been profitable without an antecedent change in relative prices (*i.e.*, rise in wages, decline of interest) come to the same thing as Wicksell's "technical invention that renders long-term investment more profitable (absolutely) than previously."[36]

For all the progress Wicksell made with the shares-problem, one aspect of it invites criticism—namely, his constant treatment of it on the assumption of perfect competition, which is useful only for dealing with technologically stationary societies of atomistic enterprise. Once the scene shifts to technologically progressive societies, the problems of large-scale enterprise and imperfect competition inevitably intrude themselves into the analysis. Yet he was well aware of the relation between decline of competition and economies of scale in dealing with the product-exhaustion problem (*Lectures-I,* pp. 126-29, 131, 133). If Wicksell had also pursued his distributive shares discussion on the assumption of imperfect competition, then he might have discovered that oligopolistic market structures are apt to bring forces into existence which threaten the very source of technological progress in the interest of protecting existing investments against obsolescence. It was undoubtedly for lack of a developed theory of the firm that he was unable to effect this integration, in itself not far to seek, between his observations concerning imperfect competition in "value theory" and those of his "theory of distributive shares."

B. The Wicksell Effect

In his distributive-share analysis Wicksell stressed a force which is a partial offset to the decline of interest under continuous net accumulation, a phenomenon also observed by the classical economists, especially J. S. Mill, in their speculations concerning the tendency toward a zero interest rate and, presumably, a stationary society. This was the observation that a certain portion of net real saving is absorbed in rising real wages and rent during an interval of capital formation. This seemed a strong guarantee against a zero interest rate, for rising wages and rent could be expected to absorb enough net saving to prevent creation of the quantity of capital that would drive its marginal productivity to zero. Wicksell was rather preoccupied, in three separate

[36] J. R. Hicks, *Theory of Wages*, pp. 121-27.

demonstrations, with this partial-wage-absorption of saving, so much so that we label it the "Wicksell effect."[37]

He used his demonstrations as an argument against the full applicability to the factor real capital (at both the macro- and the micro-economic level) of "Thünen's law," as he used to call the marginal productivity principle. An increase in real capital, like that of any other factor, augments output by an increment, the social marginal product of capital. If we divide this output-increment by the net real saving that was destined and accounts for the increase in real capital, we obtain the "social marginal productivity rate" of real capital. Now if Thünen's law is to apply, this rate must equal the rate of interest ruling at the end of the period of net capital formation. Actually it does not, for the social marginal productivity rate of capital is somewhat smaller than the interest rate in proportion to the extent to which rising wages and rent have absorbed some of the net saving. The interest rate, on the other hand, is determined by the marginal productivity of the somewhat smaller quantity of real capital that was created. Now, *per contra,* if society's labor force (or its land) increases, other factors constant, the resulting social marginal product when divided by the labor increment gives us its social marginal productivity rate which, since no similar absorption of labor power has occurred, equals the rate of wages (or rent) at the end of the interval of labor increase. Thus Thünen's law applies fully to labor and land and their remuneration, but it applies to real capital only at the private or micro-economic level.

There were difficulties with Wicksell's argument and proofs, matters we can not enter on here, yet he was substantially right about his "effect" being a phenomenon uniquely associated with changes in the factor real capital. His stress on it was effective in the sense that his proofs were a first attempt which gave rise to a succession of more effective ones to study the process of capital formation in detail.

Essentially, the Wicksell effect points to a host of problems connected with adjustments between the capital structure and (1) changes in income distribution, (2) changes in magnitude and composition of total output (relatively more or less capital goods or consumption goods when total output varies), and (3) changes in income dispositions of individuals (saving versus consumption when income varies) that are called forth by variations in the capital structure itself. These are ad-

[37] J. S. Mill, *Principles of Political Economy,* Ashley edition, pp. 67-68, 79-90, 713-14. Wicksell's demonstrations occur in *Über Wert,* pp. 112-14; *Lectures-I,* pp. 177-80, and in his review of G. Åkerman's *Realkapital und Kapitalzins,* Vol. I (1923), in *Ekon. Tidskrift* (1923), a review now translated and appended to *Lectures-I,* where wage-absorption-of-saving is discussed verbally, pp. 269 ff., and mathematically, pp. 291 ff.

justments which seem to be required to maintain equilibrium or to prevent the "vertical maladjustments" that von Hayek stresses. As such, the Wicksell effect at the real level is a force opposed to that of "forced saving" at the monetary level of analysis in his cumulative processes. If Wicksell had juxtaposed these two forces on a common plane of discourse, he might have arrived at a capital-structure-maladjustment thesis somewhat similar to von Hayek's. For it can be shown, though we must refrain from the attempt here, that von Hayek's vertical maladjustment," or, in the later versions of his thesis, his "Ricardo effect," represents the swamping of the Wicksell effect that must occur by the increasing momentum of "forced saving" in the upward cumulative process.[38]

C. *Monetary Theory*

Undoubtedly, Wicksell's greatest contribution lies in the field of monetary theory. During the years 1898-1915 he became the founder of modern monetary analysis. He originated the aggregate demand-supply approach—emphasizing especially the relation of investment to savings—to changes in value of money and associated changes in tempo and scope of economic activity which find expression in fluctuations of price levels, income, and employment. This is not to say that he had an explicit theory of income and employment in the sense of the contemporary "Stockholm" and "Keynesian" schools, for, *inter alia,* he had no clear understanding of the consumption function and its impact on the determination of income. Yet, and herein lies perhaps his greatest merit, he developed the all-essential analytic framework within which these and other "schools" have generated their theories by using substantially the same variables he used, but assigning different values or rôles to them and dismantling some of his restrictive assumptions concerning perfect competition, perfect foresight, and so forth.

Wicksell acknowledged an intellectual debt to the participants of the bullionist controversy at the opening of the 19th century and an even greater debt to those, especially Thomas Tooke, who carried it on at mid-century as the currency-banking school polemic and in the debates surrounding the passage of the Peel Acts. They, together with Marshall and I. Fisher, may be regarded as his forerunners.[39] For it is still true that when Wicksell began his work, monetary theory was confined to

[38] *Cf.* the writer's doctoral thesis, *Knut Wicksell—A Study in Economic Doctrine,* pp. 276 ff., 290-97 (University of California, 1950).

[39] The relation of Wicksell's to earlier monetary doctrine has received attention by F. A. von Hayek in *Production and Prices,* pp. 1-32, and in Alvin Hansen's *Monetary Theory and Fiscal Policy* (1949), Appendix A and Chaps. 3 and 6, respectively. We should also mention that when D. Davidson pointed out to him, in a note in *Ekonomisk Tidskrift* (1916), that Henry Thornton had expressed a thesis akin to that of *Interest and Prices* in his treatise *Inquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802), pp. 283 ff., Wicksell was delighted and surprised to find that ideas akin to his own

varied expressions of the simple quantity theory. Apart from his own contributions, it remained in much the same state in the rest of the world until the 1920's, as is indicated by the success of I. Fisher's work, *The Purchasing Power of Money* (1911), and a second edition as late as 1922.

Monetary discussion was mainly devoted to questions of currency reform, mono- versus bi-metallism, and these versus "tabular" standards of value. Even Marshall with his insight into "real balances" as a prime constituent of the demand for money and his stress on the need for exercise of "bank rate" to restrain speculators and forestall panics, did not transcend the traditional concern over currency standards and the mechanism of payments.[40] In all fairness it can be said that with Marshall and Fisher the problem of value constancy of money was reduced to finding ways and means to make investors reckon in real terms and to bar "speculative" as distinct from "sound" investment. But in their systems there was no direct path from the elasticity and quantity of currency to the forces that act on individual income dispositions and on entrepreneurial production decisions. Keynes, who professed to labor in the Marshallian tradition, belatedly came to recognize this as is shown by his assessment of Marshall's and Wicksell's respective efforts in monetary theory.[41] Since we have already dealt with Wicksell's proposals for reform of monetary institutions, we proceed here to his apparatus of monetary analysis.

1. *Wicksell's Concept of Money and Credit.* In his criticism of the "simple" quantity theory, Wicksell made it clear that monetary analysis must proceed in short-run defiance of Say's law by means of an aggregate demand-supply approach.

> Every rise or fall in the price of a particular commodity presupposes a disturbance of the equilibrium between the supply and demand for the commodity. What is true in respect of each commodity separately must doubtless be true of all commodities collectively. A general rise in prices is therefore only conceivable on the supposition that the general demand has for some reason become, or is expected to become, greater than the supply. . . . Any theory of money worthy of the name must be able to show how and why monetary or pecuniary demand for goods exceeds or falls short of the supply of goods in given conditions.[42]

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were "ancient" enough to antedate Ricardo's writings. This may serve as a reminder to those who regard Wicksell as a "rediscoverer" of Thornton's work, for instance, Professor E. Whitaker in *A History of Economic Ideas*, p. 701. Wicksell's work was evidently done independently and in ignorance of that of Thornton. If anyone is to be credited with rediscovering Thornton, perhaps the honor should go to D. Davidson.

[40] A. Marshall, "Remedies for Fluctuations in General Prices" (1887), reprinted in *Memorials of Alfred Marshall* (1925), pp. 188-211.

[41] J. M. Keynes, *A Treatise on Money*, Vol. I (1930), pp. 186, 192-93, and 198.

[42] *Lectures-II*, pp. 159-60.

For his purposes, a question of the conditions for value constancy of money and of the causes and consequences of its fluctuation in value, he adopted the following general concept of money:

> . . . money is a quantity in two dimensions, quantity of value, on the one hand, and velocity of circulation, on the other. These two dimensions multiplied together give the "efficiency" of money (a term due to Helfferich) or its power to facilitate the turnover of goods in a given period of time.[43]

This expresses the left side of the Fisher equation of exchange, MV. Although Wicksell studied the forces that account for variation in V, the reciprocal of the extent to which "value storage" occurs in the form of money, his analysis of V was neither complete nor fully integrated with the rest of his system. Briefly, it amounted to an income velocity explanation of the rate of turnover of cash balances.[44] Yet his study of velocity led him to a fruitful insight, that the influence of credit on currency "may under all circumstances be regarded as accelerating the circulation of money," *i.e.,* increasing its "virtual velocity" (*Lectures-II,* p. 67).

From this he concluded that in a "pure cash" economy V is practically a constant, and the old quantity theory holds without qualification. At the other extreme, a "pure credit" economy (one where checking accounts have almost entirely replaced currency and where the total amount of deposits is fully subject to the policy discretion of the central bank), this V becomes a variable magnitude which may, potentially, approach infinity. Here the "supply of money" is perfectly elastic, and, subject to the central bank discount rate, adapts itself perfectly to the demand for money. Accordingly, he conducted most of his monetary analysis on the assumption of a "pure credit" system for a closed economy. This gave him a great advantage in generalizing his treatment by relegating particular monetary institutions into the background, and, as Ohlin put it, thus "escaping from the tyranny that the concept 'quantity of money' has exercised over monetary theory."[45]

2. ***Wicksell's Theory of Monetary Equilibrium and his Norm for Monetary Policy.*** Wicksell's apparatus of monetary analysis can be indicated as follows. Aggregate demand consists of money income spent for consumption and money income saved. Aggregate supply has two corresponding categories of goods, output of consumption goods and of capital goods. Changes in the value of money or in the price level must

[43] *Ibid.,* p. 19.

[44] The quantity of money is the sum of cash balances; the demand for money is a demand for cash balances. The latter has several constituent elements, the most variable of which is a demand for balances to accommodate accumulation of savings which are not simultaneously absorbed in investment; *cf. Interest and Prices,* Chap. 6, and *Lectures-II,* pp. 59 ff.

[45] B. Ohlin, in his "Introduction" to *Interest and Prices,* p. xiv.

be determined by the interaction of these variables. Savings enter the money market as a supply of investable funds, where, if banks do not indulge in net creation nor in net destruction of deposits, they become available at a loan rate which equates entrepreneurs' investment demand for them to their supply. Investment demand is determined by the "real rate of interest," *i.e.*, by the "expected yield on recently created real capital," the analogue of marginal efficiency of capital. The monetary equilibrium that arises when the loan rate equals the real rate was expressed in this manner:

> The rate of interest at which the *demand for loan capital and the supply of savings exactly agree*, and which more or less corresponds to the expected yield of the newly created real capital, will then be the normal or natural real rate. It is essentially variable. If the prospects of employment of capital become more promising, demand will increase and will at first exceed supply; interest rate will then rise and stimulate further saving at the same time as the demand from entrepreneurs contracts until a new equilibrium is reached at a slightly higher rate of interest. At the same time equilibrium must *ipso facto* obtain—broadly speaking, and if not disturbed by other causes—in the market for goods and services, so that wages and prices will remain unchanged. The *sum* of money incomes will then usually exceed the value of consumption goods annually produced, but the excess of income—*i.e.*, what is annually invested in production—will not produce any demand for present goods but only for land and labor for future production.[46]

This equilibrium may be disrupted in several ways by his famous "cumulative processes." The real rate and investment demand are highly variable because expected yield of capital is affected by innovation, population growth, opening of new markets, etc. For one of these reasons the real rate rises while the loan rate remains constant. Investment demand rises above the concurrent supply of voluntary savings, but the deficiency is made up by net deposit creation within the pure credit system. Rising investment demand has begun raising prices on capital goods and shifts the distribution of augmented money income in favor of entrepreneurs. The latter, anxious to expand investment on roseate profit prospects, compete for labor and land fully employed elsewhere, and succeed in attracting some of these resources away from consumption goods production at a rise in wages and rents. Thus output of consumption goods declines somewhat while money income and consumption spending of workers and landowners increases. Hence consumption goods' prices rise, and their rise makes profit prospects in capital goods industries even brighter. This induces further expansion there at another rise in wages and rents with further curtailment of consumption output and a subsequent new rise in their prices, etc. This process might go on indefinitely until hyperinflation ends in a

[46] *Lectures-II*, p. 193.

crisis in the course of which the loan rate is raised. It may be raised above the level of the real rate with consequences of cumulative deflation, or it may be raised to equal the latter in which case a new equilibrium arises, most likely at prices that are somewhat higher than in the initial situation.

Wicksell did not insist that cumulative processes necessarily must terminate in crises of hyper-inflation or deflation; nor did he exclude the possibility they may set in motion forces that eventually generate a new equilibrium without crisis. He was content to have demonstrated that the discrepancy between the rates "... is enough to explain actual price fluctuations which manifestly cannot be due to variations in the quantity of gold . . . ," (*Lectures-II*, p. 200).

But even in a pure credit system, the banks are not in a position to know the vagaries of the real rate. Yet he insisted their primary duty is to give money value-constancy, *i.e.*, to stabilize the price level. The means to that end is for them to vary the loan-rate in the same direction as the drift of the price level away from its normal index level of 100. The result would not be perfect price stabilization but price fluctuation narrowed to a much smaller range than in the past. Moreover, in conditions short of a pure credit system, he was fully aware the banks can not effectively stabilize the price level by interest rate policy if large, autonomous changes in money quantity occur (for instance, gold in- or efflux for a particular country; for the world as a whole, a sudden rise in gold production or its cessation altogether; or if governments engage in heavy deficit finance and/or fiat issues, or their opposites). But the gold complications were presumably remediable by his international clearings system and the effective demonetization of gold, and, except in times of war, there should be no occasion for serious interference with price stabilization from the side of government finance.

3. *Modification of the Monetary Policy Norm—The Wicksell-Davidson Polemic*. His prescription of price stabilization as the norm for monetary policy rested on a tacit assumption which Davidson was quick to discover. This led to a polemic between the latter and Wicksell in *Ekonomisk Tidskrift*, 1906-1909. While Davidson had the better part of the argument, the issues between them were never properly joined because of the crabbed manner in which both of them argued.[47]

Davidson's point was that price stabilization is only consistent with maintenance of equilibrium if productivity is constant, but if the latter changes, the proper norm is to let prices vary roughly in inverse proportion to the change in productivity. We have initial equilibrium and productivity rises, which means the real rate rises, hence the banks should raise the loan rate accordingly. If this is done, money income

[47] This polemic has been sketched by B. Thomas in "The Monetary Doctrines of Professor D. Davidson," *Econ. Journal*, Vol. XLV (March, 1935).

remains constant, but increased productivity means larger output which must then be sold at declining prices. Now, if the banks insist on stabilizing prices, then they must reduce the loan rate to prevent the price decline. If so, the loan rate becomes "too low" and lays the basis for an upward cumulative process. For reduction of the loan rate means net deposit creation and an increase in factor payments proportionate to the rise in productivity. This increase in factor incomes is not likely to be divided between saving and consumption in the same proportion as the increase in output is composed of consumption and of capital goods. Most of the extra money income may be spent for consumption at a rise in consumption goods' prices which becomes the basis for an upward process.

It was years later, 1925, after Sweden had tasted severe inflation during World War I, and after Davidson had published the substance of his own monetary analysis in articles in *Ekonomisk Tidskrift*, 1918-23, that Wicksell conceded the strength of his argument. His concession came as an admission that banks can not effectively prevent the inflation that results from "commodity scarcity," *i.e.*, from the equivalent of a decrease in productivity, caused by blockade and other dislocations of warfare.[48] Yet Wicksell did not abandon price stabilization as an imperfect, but to his mind the only practicable criterion for monetary policy. In a peaceful world, he argued, there would be no war-caused "commodity scarcity" nor any other occasion for inflation due to precipitate "decrease in productivity." As for "increase in productivity," he averred such increases are of small scale and are a secular force that does not seriously distort equilibrium relations in the short run. As for Davidson's norm, to let prices vary inversely with changes in productivity, he thought it a counsel of perfection and pointed to the pervasiveness of imperfect competition to block its adoption. Thus he was convinced the practical choice lay between his own norm and no definite norm at all.

4. *Major Characteristics of Wicksell's Monetary Analysis.* Looking back on the foregoing, the salient features of Wicksell's innovation in monetary theory may be summarized as follows:

a. His explanation of cumulative price level fluctuations reversed the alleged relation between changes in money-quantity and the price level as expounded in the quantity theory. It was generally the other way around; the price level rises or falls without corresponding change in money-quantity or in output, but its fluctuation causes a corresponding change in velocity of circulation of money. In the absence of (1) large, autonomous changes in money-quantity (due (i) to the *modus operandi* of the gold standard, or (ii) to major changes in government finance),

[48] For evidence of this concession see *Interest and Prices*, pp. 201, 204-05, 213-15, where one of Wicksell's last articles, "The Monetary Problem of the Scandinavian Countries," originally published in *Ekon. Tidskrift* (1925), has been translated and included as an appendix.

and in the absence of (2) large, autonomous changes in productivity, price level fluctuations were caused by a divergence between real and loan rates of interest.

b. The driving force behind the movement of prices was a variable investment demand functionally related to the real rate, which latter varies in response to the impact of "real forces," such as innovation, population growth, and so forth.

c. The variability of investment demand implied short-run divergence between aggregate demand and supply. For consumption demand (aggregate income minus saving), does not readily shift out of equilibrium with the supply of consumption goods *except as* total income changes. Hence changes in income were primarily due to a divergence between investment and savings.

d. A moving price level with its attendant changes in circuit velocity of money implies a change in the magnitude and distribution of total money income, and a "forced" change in the allocation of real income between consumption and formation of real capital, a phenomenon which in his day was expressed by the conception of "forced saving" and its opposite.

e. Maintenance of monetary equilibrium and its restoration after disruption was entirely placed on the adjustment powers of central bank discount or interest policy. Optimistically, he considered such policy equally capable or arresting and reversing a deflationary price movement as he, more realistically, thought it capable (in the absence of gold standard, or fiscal interference, or drastic productivity change) of arresting and reversing an inflationary price movement.

f. His analysis proceeded on assumptions of (i) a closed economy with a pure credit system, with (ii) perfect competition on all markets, (iii) high mobility and full utilization of resources, and (iv) near-perfect foresight for all except central bank directors who, because of their deficiency in this regard, must be guided by rational norms of monetary policy.

5. *Transformation of Wicksell's Heritage of Monetary Theory: The Rise of the "Stockholm School."* Shortly after his death, Wicksell's heritage of monetary theory and also that of Davidson, underwent a searching exegesis and expansion by the efforts of younger economists in Sweden, notably Professors Lindahl, Myrdal, and Ohlin, whose labors gave rise to the vigorous, contemporary "Stockholm School." We can not enter into this interesting development here, but it may be useful to point out the primary transformations Wicksell's heritage has undergone in this process.[49]

[49] The rise of the "Stockholm School," 1927-35, is related in Ohlin's article, "Some Notes on the Stockholm Theory of Saving and Investment," *Econ. Journal* (1937), reprinted in *Readings in Business Cycle Theory* (1944), pp. 87-130; *cf.* further the well-known works of E. Lindahl, *Studies in the Theory of Money and Capital*, and G. Myrdal, *Monetary Equilibrium* (1939).

Lindahl and Myrdal approached the Wicksellian heritage in the conviction that entrepreneurial anticipations are the strategic factor to which most other economic variables respond. Each selected a more refined technique of analysis than Wicksell had used. Lindahl entered on a sequence or intertemporal equilibrium analysis, and Myrdal used a complementary technique of disequilibrium analysis, the *ex ante, ex post* method. The former attempts to find the conditions that influence and determine the direction of entrepreneurial anticipations and then seeks for criteria for policy that will elicit the kind of entrepreneurial behavior that tends to maintain or restore economic stability. The latter asks how, with the *ex post* data on which analysis must proceed, shall we be able to tell whether anticipations have been consistent *ex ante*, and if not, in which direction from *ex ante* equilibrium are we drifting? In both cases a systematic study was made of the Wicksellian apparatus under more realistic assumptions than he had used, assumptions of imperfect competition, imperfect foresight, underutilization of resources, and so forth. Some characteristic conclusions are as follows.

The significant variable, investment *ex ante*, is determined by entrepreneurial anticipations, and it in turn accounts for changes in income, and, via the latter, for the adaptation of savings (by *ex post* gains or losses) to the rate of investment. Since factor prices are not very flexible, income fluctuations account for variations in employment. Thus fluctuating income levels take the place of Wicksell's fluctuating price levels as the important variable. For the price level adapts itself to changes in income, and in adapting itself it effects changes in distribution of income, just as in Wicksell's case it was the quantity of money that adapted itself to the movement in the price level and affected income distribution in that process.

Monetary equilibrium or equality between *ex ante* investment and saving is compatible with price movements provided they are not cumulative and unilateral. It is also compatible with and conditioned upon human and other resource underutilization to a degree corresponding to the extent of market imperfection. Here a price-structure underemployment equilibrium emerges as an alternate to Keynesian underemployment equilibrium based on interest-inelastic investment demand and on a minimum level of interest rate determined by infinite elasticity of liquidity demand for cash balances.

In maintaining and restoring equilibrium, interest rate policy can be of service, for instance, in adapting flexible prices (capital values) to changes in inflexible prices (wage rates), but it can not guarantee full employment. Its rôle is rather one of removing monetary causes of instability and of adapting the money and credit structure to nonmonetary causes of economic change. The latter must generally be dealt with by nonmonetary measures.

Because of imperfect competition and the coexistence of flexible

and inflexible prices, interest changes by themselves are likely to be ineffective in achieving a sufficient approach to economic stability. Therefore, monetary policy requires coordination with other policy, especially with fiscal policy. Moreover, interest rate reduction in depression is unlikely to suffice for initiating recovery. The latter depends more on maintenance of consumption at some level not far below its average level, for instance, by means of public expenditures for social security, unemployment benefits and by private disinvestment. Cushioning of consumption and deferral of replacement investment during the downturn are together likely, after some time, to raise *ex ante* investment demand above the reduced rate of *ex ante* saving and thus provide a basis for recovery.

These and other insights, made available by the intensive and comprehensive work of the Stockholm School, indicate, however sketchily, some broad features of the transformation of the Wicksellian heritage.

VI.—*Conclusion: A Comment on Wicksellian Economic Philosophy*

Perhaps it is fitting to close this paper with a general remark about the economic philosophy of Wicksell and his followers. That philosophy may be characterized as experimentalist on the positive side and as devoid of orthodoxy on the negative side. Neither he nor his followers have been imbued by strong preconceptions in favor of *laissez faire* systems. They were willing to bid the "unseen hand" farewell and place increasing reliance on deliberate, rationally conceived economic policy as constituting the best prospect for achieving greater stability and internal harmony in the economy. Because their outlook was focussed on, and to some extent enabled them to anticipate, the course of economic change, it avoided doctrinaire allegiance to particular positions and opposition to all others that has vitiated much of the reasoning among various "schools" outside as well as inside the Marxist camp.

It is readily granted that such a frame of mind *per se* is no guarantee against errors and bias in analysis, nor against selection of less-than-best policy alternatives. Yet it preserves and widens the scope for such objectivity as is possible in social science. It conduces to an open-mindedness, a willingness to generate and test new approaches, including a certain readiness to take calculated risks where the *a priori* yields no unique answer. Needless to say, such a philosophy, which is the *essence* of the Wicksellian heritage, for all its adaptibility does not lack for method and rigorous discipline. Yet, its success seems to rest on its having avoided making a straight-jacket out of discipline and on its having been able to distinguish between its assumptions and reality.

ISSUES OF BUSINESS CYCLE THEORY RAISED BY MR. HICKS

By Sidney S. Alexander*

In *A Contribution to the Theory of the Trade Cycle*[1] Mr. Hicks has presented a simple theory of the business cycle, based on his own recombination of elements previously recognized. These elements are primarily the interaction of the accelerator and the propensity to consume, subject to lags, and a ceiling on the rate of increase of production at or near full employment. The accelerator expresses the tendency for investment, or possibly disinvestment, to be induced by changes in the level of income or production. In its simplest form it is the ratio of the amount of investment so induced to the change of national income which induced it. From a sophisticated viewpoint the accelerator may be regarded as a more complicated description of the manner in which investment or disinvestment is influenced over time by changes in the level of national income or of its components. The propensity to consume expresses the tendency for the level of consumption to depend on the level of income. In its simplest form the marginal propensity to consume is the ratio of the additional consumption expenditure associated with a given additional amount of income to that additional income. More generally the term propensity will be used in this discussion to cover the dependence of the rate of expenditure on the level of income, the term accelerator, to denote the dependence of the rate of expenditure on changes in the level of income.

The accelerator has long been used in the explanation of certain phases of the business cycle,[2] but its rôle as a possible generator of cumulative movement was not fully recognized until it was combined with the Kahn-Keynes multiplier.[3] As Mr. Hicks has observed, it is

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[1] J. R. Hicks (Oxford, 1950).

[2] *Cf.* Albert Aftalion, *Les Crises Periodiques de Surproduction* (Paris, 1913), and J. M. Clark, "Business Acceleration and the Law of Demand," *Jour. Pol. Econ.*, Vol. XXV, No. 3 (March, 1917).

[3] R. F. Harrod, *The Trade Cycle* (Oxford, 1936), and Paul A. Samuelson, "A Synthesis of the Principle of Acceleration and the Multiplier," *Jour. Pol. Econ.*, Vol. XLVII, No. 6 (1939), and "Interactions between the Multiplier Analysis and the Principle of Acceleration," *Rev. Econ. Statistics*, Vol. XXI, No. 2 (May, 1939), reprinted in *Readings in Business Cycle Theory* (Blakiston, Philadelphia, 1944).

noteworthy that Keynes failed to combine the accelerator with the propensity. In his notes on the trade cycle (*General Theory,* Chap. XXII) Keynes did in fact mention the influence of changes in the level of income and employment on the marginal efficiency of capital, and hence on the rate of investment, but laid no great stress on this factor. Rather, he emphasized a collapse of expectations as initiating the downturn through its effect in discouraging investment. The accelerator was credited with helping on the upturn as soon as excess inventories are worked off, since production must then be raised to meet current consumption which, during the downswing, was partly met out of inventories. Furthermore, Keynes' brief dictum that "when once the recovery has been started, the manner in which it feeds on itself and cumulates is obvious," may be interpreted as implying the interaction of accelerator and multiplier on the upswing.

Although these glimmers of the interaction of the accelerator and propensity can be found or inferred in the *General Theory,* it remained for Mr. Harrod to incorporate this interaction into a thoroughgoing theory of the business cycle which appeared close on the heels of the *General Theory.* Mr. Harrod pointed out that if, for the community as a whole, the propensity to consume is constant, *i.e.,* the marginal propensity is equal to the average,[4] and if there is a constant accelerator equal to the average proportion of capital to income, then a steady rate of advance of income would be possible.[5] Thus, suppose that the national income is at $100 billion, total productive assets are at $200 billion, the marginal (equal to the average) propensity to save is 10 per cent, and the accelerator on an annual basis is equal to 2 or the ratio of the total stock of productive assets to annual income. That is, a $1 increase in annual income produced induces additional net capital formation of $2. Under these conditions, in the absence of lags, a steady rate of advance at 5 per cent per year would be possible. For in the year under consideration that would involve savings of $10 billion and investment of $10 billion, and in the next year a national income of $105 billion with saving of $10.5 billion and investment of $10.5 billion, etc. So long as these conditions of constancy of propensity and accelerator hold, a cumulative upward movement is possible with investment balancing savings at all levels of income attained. Mr. Harrod then explained the business cycle on the assumption that the foregoing conditions of constancy of propensity and accelerator did not hold. In short, in *The Trade Cycle* Mr. Harrod used the interaction of propen-

[4] In his presentation this condition was expressed as the two conditions that (i) representative income savers save the same proportion of the increment of income as previously and (ii) there is no shift to profit.

[5] *Trade Cycle,* p. 90. Less stringent conditions actually would suffice.

sity and accelerator to explain cumulative movements but relied on changes of the coefficients to explain the turning points.

In 1939 Samuelson[6] pointed out that the combination of the accelerator and the propensity could, provided lags between income and consumption and investment were taken into account, lead not only to steady growth but also to cycles or to a gradual approach to an equilibrium value, depending upon the magnitude of the coefficients of acceleration and consumption involved. Tinbergen also developed a model that was formally similar, explaining the movement of non-wage income.[7] In Tinbergen's model, however, the term corresponding to the accelerator was introduced via the influence of speculative profits on consumption outlay, and the propensity to consume through the assumption that wage earners consume all their income and profit recipients part of their income. Models similar to Samuelson's in mathematical form but differing in substance had previously been developed by Frisch[8] and Kalecki,[9] whose models do include the accelerator but not the propensity to consume. Harrod's and Samuelson's models are distinguished from those of Tinbergen, Kalecki and Frisch in that they contain both propensity to consume and accelerator, while the other models have one or the other element, but not both. As compared with Harrod's approach, Samuelson's model, through the introduction of lags, indicates that cyclical behavior can be generated even if propensity and accelerator remain constant.

In 1939 Harrod advanced an extension of his arguments in *The Trade Cycle,* seeking to establish, among other things, "that the trend of growth may itself generate forces making for oscillation."[10] He called that rate of steady growth which would just keep saving and investment in balance, as indicated in the example above, the warranted rate of growth.[11] He pointed out, however, that the warranted rate of growth would be unstable in the sense that if in any period income should be changing at a rate different from the warranted rate of growth subsequent rates of growth would diverge more and more from the warranted rate.

[6] See footnote 3.

[7] *Statistical Testing of Business Cycle Theories. II, Business Cycles in the United States of America, 1919-9132* (Geneva, 1939).

[8] "Propagation Problems and Impulse Problems in Dynamic Economics," *Economic Essays in Honour of Gustav Cassel* (London, 1933).

[9] "A Macrodynamic Theory of Business Cycles," *Econometrica,* Vol. 3, No. 3 (1935).

[10] "An Essay in Dynamic Theory," *Econ. Jour.,* Vol. XLIV, No. 193 (March, 1939), p. 15. In fact, however, his theory accounts for cumulative movement but not for oscillation.

[11] Domar, "Expansion and Employment" *Am. Econ. Rev.,* Vol. XXXVII, No. 1 (March, 1947), developed a similar concept.

Mr. Harrod also introduced the concept of the natural rate of growth, "the maximum rate of growth [of income produced] allowed by the increase of population, accumulation of capital, technological improvement and the work/leisure preference schedule, supposing that there is always full employment in some sense."[12] If the natural rate of growth is below the warranted rate, then the warranted rate cannot be sustained once full employment is reached, and not even the natural rate can then be sustained. At rates of growth less than the warranted rate of growth subsequent rates of growth will be lower, and will eventually lead to declining income. Therefore, if the natural rate of growth is less than the warranted rate, there will be a chronic tendency to depression.

Mr. Hicks has adopted, with modifications that cannot be regarded as essential, the Samuelson mechanism describing the interaction of the accelerator and propensity, with lags of consumption and investment expenditures behind the income or changes of income which induce those expenditures. He uses that mechanism primarily to explain the cumulative upward or downward movements of income and production, but not necessarily the turning points.

According to Mr. Hicks, cycles, like verbs, can be classified according to whether they have strong or weak endings. A cycle is said to have a strong ending when it runs into what Hicks calls the production ceiling. This ceiling corresponds to Harrod's natural rate of growth. It is not to be regarded as a stationary upper limit of production but a moving upper limit of the growth of production at or near full employment that the economy can sustain for technological reasons such as limitation of resources. If the course of output determined by the model involving interaction of accelerator and propensity to consume (plus some autonomous investment) leads to a level and a rate of growth of production that cannot be achieved because of the limitation imposed by the ceiling, there will, according to Hicks, necessarily be a downturn. As indicated below, Hicks errs in stating that his model will necessarily indicate a downturn under these circumstances. Whether or not output will turn down after encountering the ceiling depends, as Harrod indicated in his 1939 article, on whether the warranted rate of growth is greater or less than the natural rate of growth. For certain values of accelerator and propensity to consume, however, the natural rate of growth at the ceiling may not be sufficient to induce enough investment expenditure to keep output at the ceiling and, therefore, the encounter with the ceiling will in such cases lead to a downturn. A cycle is said to have a weak ending when the values of the accelerator and propensity to consume are such that output reaches a peak and starts

[12] *Op. cit.*, footnote 10, p. 30.

declining before it hits the production ceiling. That is, in a weak cycle the interaction of accelerator and propensity is such as to generate cyclical movement.

The course of a cycle as described by Hicks is as follows, starting from the beginning of recovery. Once started, recovery is continued and possibly accelerated by the interaction of accelerator and propensity, up to the upper turning point. The downturn at the upper turning point is brought about in the case of a strong cycle by an encounter with the ceiling, in the case of a weak cycle by the interaction of accelerator and propensity. The downswing is governed largely by the fact that the propensity to consume is less than unity, and disinvestment is taking place, so that each period's output and income is lower than the preceding period's until the lower turning point is reached. That lower turning point is determined by the level of autonomous expenditure and by the termination of the incentive to disinvest as capital is, through disinvestment, reduced into the desired relationship to output.

If there were no autonomous expenditure, the values of propensity and maximum possible rate of disinvestment might be such that disinvestment could never catch up with declining output, and there would be no lower turning point. Hicks, however, assumes that autonomous expenditure is greater than the rate at which disinvestment can take place so that a floor is reached at which because of the decline of income, savings are reduced to a level at which they can be matched by the excess of autonomous expenditure over the rate of disinvestment. Eventually, through disinvestment, and possibly through increase of autonomous expenditure, capital will be reduced into the desired relationship to this lower floor of income, and disinvestment will be terminated. The lower turning point will actually be a turning point because, the disinvestment being terminated, investment will rise from a level of autonomous investment minus disinvestment toward the level of autonomous investment itself. This rise in investment will, through the propensity lead to a rise in income, and the rise in income through the accelerator to a rise in induced investment, so that the upward movement is then in full swing to be continued until either the ceiling is encountered or the interaction of accelerator and propensity leads to a downturn.

The cycle has so far been described completely in real terms. The growth of output, and the rates of saving and investment are all expressed as real rather than monetary quantities, as are the functional relations of the accelerator and the propensity to consume. Mr. Hicks does indicate that combined with this real cycle there can also be a monetary cycle which may intensify the fluctuations and change some of their characteristics, such as timing. The monetary cycle ac-

cording to Mr. Hicks essentially depends on a lag of the rate of interest behind its equilibrium value. The rate of interest may so behave over time as to change the values of the accelerator and propensity to consume and so to intensify the strength of the cumulative movements and possibly to add sharpness to the turning points. Thus, if during the upward course of the cycle the rate of interest is below its equilibrium value, even more consumption and investment will be induced than if the rate of interest were immediately adjusted upward. The delay in adjusting the rate of interest would make accelerator and propensity and autonomous investment larger. If, at the upper turning point, the rate of interest should suddenly be raised, it would presumably discourage investment and consumption expenditure and strengthen the forces making for a downturn, and so on through the cycle. Mr. Hicks is clearly less interested in the monetary factors than in the real factors as generators of the cycle. The real factors appear to be fundamental and the monetary factors accidental.

Mr. Hicks' presentation demonstrates the presence of cyclical fluctuations in business cycle theories themselves. In the 'twenties and 'thirties a business cycle theory generally embodied two parts—one was a theory of cumulative movement, explaining the upswing and downswing, the other was a theory of the turning points. This structure of business cycle theories is clearly illustrated by Haberler's *Prosperity and Depression*, 1937 ed., where Chapter 9 is titled "The Process of Expansion and Contraction," and Chapter 10, "The Turning Points." The work of Tinbergen, Frisch, Samuelson and Metzler was concerned to show the possibility of "weak" or "endogenous" turning points, that a single set of relationships expressed in a linear model could explain not only the turning points but also the upswings and downswings. Now Hicks and Goodwin[13] offer non-linear models whose nonlinearity is contained in switches of behavior at or near the turning points, the existence of ceilings and floors. It is a fundamental characteristic of such non-linear models that they can yield a definite amplitude of fluctuation as between ceiling and floor, in contrast to the earlier linear models whose amplitudes depended on the initial departures from equilibrium as well as upon the values of propensity and accelerator.[14]

Since the elements of Mr. Hicks' theory of the cycle were previously well recognized, the principal justification of Mr. Hicks' work was to clarify the relations involved and to show how they can be fit together. This has been done superbly. Furthermore, Mr. Hicks has explored some of the technical characteristics of the mechanism of the inter-

[13] "The Nonlinear Accelerator and the Persistence of Business Cycles," *Econometrica*, Vol. 19, No. 1 (Jan., 1951).

[14] I am grateful to J. J. Polak and Paul A. Samuelson for pointing out this swing of business cycle theories.

action between the accelerator and propensity to consume and presented them with great clarity and ingenuity.

The present discussion considers certain controversial points raised by the general theory of the cycle as presented by Mr. Hicks. These can be considered under the following three headings—*The Cumulative Movement:* Does the interaction of induced investment and disinvestment with the propensity to consume furnish the major explanation of cumulative movements of production? *The Downturn:* Is the downturn to be explained principally either by the encounter with the production ceiling or by the interaction of the accelerator and propensity subject to lag? *The Upturn:* Is the upturn to be explained principally by the slackening or termination of induced disinvestment?

The Cumulative Movement

Some doubt has been cast on the advisability of relying on the accelerator as a major element in the explanation of cyclical behavior. These doubts are based either on objections to the rigidity of the relationship implied or on evidence that factors other than the change in output are the principal determinants of the level of investment. The concern on the first score is groundless. If the accelerator does not hold in so rigid a form as is usually implied in discussions of the cycle but if it does hold with variations, it can serve as the basis for a theory of the cycle of the sort presented by Mr. Hicks. As long as, in general, increasing production induces investment expenditure, cumulative movements can be generated provided also there is another relationship between the level of income and the level of expenditure such as is expressed in the propensity to consume. Furthermore, if some large part of investment should be proportional to the level of income rather than to the change of income, the theory of the cycle is not thereby vitiated. A cumulative movement can be generated so long as some component of expenditure is positively related to the level of income and another component to changes in that level, even though the coefficients expressing these relationships may be variable. Whether the cumulative movement typically proceeds at an increasing or declining rate depends on the timing as well as on the magnitudes of the coefficients involved.

A more serious criticism of the accelerator is that it is not the most important factor governing changes in the level of investment. On this the evidence is far from clear. Tinbergen[15] explored the relationship between investment on the one hand and changes of output and levels of profits on the other in several industries and national economies. He concluded that there was a rather poor relationship between investment

[15] "Statistical Evidence on the Acceleration Principle," *Economica*, N.S., Vol. V (1938).

and changes in output in the industries and economies he studied, with the exception of railroads. He felt that the relationship between profits and investment seemed to be a much closer one. On the other hand Taitel[16] found only a very weak relationship between profitability and rates of investment in the industries he studied and suspected that it was the behavior of output rather than the level of profits that could best explain rates of investment. Roos[17] found that he could obtain a satisfactory prediction of investment for the economy as a whole on the basis primarily of both the level of profits and the ratio of output to capacity. He observed that the latter relationship appeared to be linear up to about 85 per cent of capacity at which point "producers are generally short of equipment and literally pour out new orders for equipment."

Tinbergen[18] in constructing his own economic model assumed that profits depend to a great extent on the rate of change of income. Taitel[19] found that while in years of intermediate recovery almost 50 per cent of the increase in national income produced by the corporate sector in the United States went to the increase in corporate profits, only a negligible (or negative) proportion of the change of national income produced by corporations in peak recovery years went to a change in profits. If, then, profits do in a large measure depend upon the level of output and changes therein, it does not matter much for the theory of the cycle under consideration whether investment is induced directly through the conventional acceleration principle, relating investment to changes in output, or through the level of profits which in turn depends upon the level of output or changes in that level.

It is hard to see how it can be denied that an increasing level of national income stimulates investment expenditure. It is, of course, possible that the mechanism leading to the stimulation of investment by the change in the level of national income involves elements not usually associated with the accelerator, narrowly defined. Thus, increasing levels of expenditure may lead to price rises, which if wages lag, may make investment more attractive. It is a valid criticism of Hicks' presentation that he has disregarded many of the problems of price or credit behavior which complicate business cycle theory. That criticism is not fundamental, however, unless the price and credit behavior would operate to suspend the dependence of expenditure partly

[16] Temporary National Economic Committee, Monograph No. 12, *Profits, Productive Activities and New Investment* (Washington, D.C., 1941).

[17] "The Demand for Investment Goods," *Am. Econ. Rev., Papers and Proceedings*, Vol. XXXVIII, No. 2 (May, 1948).

[18] *Op. cit.*, footnote 7, *supra*.

[19] *Op. cit.*, p. 34.

on the level and partly on the growth of income. If that fundamental dependence, which we may call the broad concept of accelerator and propensity, holds, it does not matter very much whether it holds directly as the accelerator and propensity are usually defined, or indirectly via profits, price, and credit movements.

Though Mr. Hicks' cyclical model can be defended against the charge of excessive rigidity by admission of the possibility of flexible accelerator and propensity operating both directly and indirectly, Mr. Hicks' discussion of his model may not be so easily defended. Issues are raised at several points that would disappear if the broad concepts of accelerator and propensity were substituted for the narrow rigid relationships. Thus, Mr. Hicks is concerned that his model shows a slower downswing than upswing, in contradiction to general observation.[20] The slower downswing, under the strict operation of the Hicks model, is based primarily on the fact that disinvestment cannot proceed so rapidly on the downswing as can investment on the upswing. But if the relationships of accelerator and propensity are presumed to hold only in a general way, it is quite conceivable that the upswing may be slower than the downswing without recourse to the monetary factors Hicks introduces to meet this emergency.

An artificial example may demonstrate this point. Suppose that the lag of consumption behind income is very short, so that when considering annual income the multiplier may be assumed to operate within the period. Suppose that for any rate of growth of income of 10 per cent or more there is induced investment of about 10 per cent of the national income, and that savings minus autonomous investment are always about 20 per cent of the excess of national income over a level X at which savings minus autonomous investment are zero. Then the final period of the upswing might be characterized by a rate of growth of income of about 10 per cent per year, at a level of income about 2X, with induced investment balancing saving minus autonomous investment at about .2X each. The downswing would involve a precipitous fall of the national income to X even if there is no disinvestment possible, a 50 per cent decline within a single year. This crude example suffices to show that, once the broad concepts of accelerator and propensity are substituted for the narrow ones, the time shape of the cycle is much more flexible than Hicks indicates.

Hicks' presentation of the theory of the cycle must strike many readers as being oversimplified and highly special. Many more factors must enter than have been taken into account. By broadening the concept of accelerator, propensity and autonomous investment, this re-

[20] P. 116.

proach can be met; and the theory of the cumulative movement made much more general. In its more general form it may be stated as follows. Production of any period depends directly on the expenditures made in that period. These expenditures may be divided into three classes: those dependent on current or previous levels of income, those dependent on current or previous changes in the levels of income, and those that are autonomous. Under these circumstances, certain cumulative movements of income can take place. Whether these movements will continue in one direction or tend to be reversed as they work themselves out depends on the magnitudes of the relationships involved and their timing. This general statement is broad enough to cover almost all theories of the upswing and downswing of the business cycle. The various theories differ only in the mechanisms by which they relate the movements of expenditure to the movements of income. Certainly the propensity to consume, and investment induced by the change in the level of income either directly or through profits, and investment depending on the level of income, all must have a prominent place among the factors linking changes in expenditure to changes in income. It must however be recognized that these factors need not be quantitatively constant within a cycle, nor need they operate in quite the same way in different cycles.

The broadening of the concepts of accelerator and propensity does introduce the possibility of many variants of business cycle theory not considered by Mr. Hicks. Thus, some investment not at all the sort usually regarded as subject to the accelerator, may still be income-induced. For example, deepening of capital such as is involved in adopting more complicated machinery is the sort of investment usually regarded as autonomous rather than as subject to the accelerator or propensity. But if there is hesitation in making such investment in the depressed phase of a business cycle, and readiness in the prosperous phase, such investment may be considered as income-induced and so should be included in the broad concept of the propensity. For example, growth of population may proceed at a steady rate and so lead to a steady increase of the need for housing. House construction activity, however, may be induced at a rapid rate in prosperous years and at a low rate in depressed years. It is argued below that the difference between such income-induced expenditures, which may be called timing-induced autonomous expenditures, and the other types of induced expenditures may be of great importance in the theory of the upper turning point.

We may henceforth use the terms accelerator and propensity in their broader sense. The propensity, now to be considered the propensity to spend, is the coefficient of level-induced expenditures, that is, the

measure of those expenditures induced by a given level of income. The accelerator is the coefficient of change-induced expenditures, the measure of those expenditures induced by a given change in the level of income. Autonomous expenditure is expenditure both for investment and consumption which does not depend on either the level or the change of income. An elegant study of the precise manner of operation of the accelerator and propensity when these are considered variable is a task beyond the powers of even advanced mathematics, but the non-mathematical economist is fortunate in that the relationships involved can be understood and manipulated in terms familiar to most economists.

At any stage of the cycle, the subsequent course of income and production depends on whether the expenditure currently being induced plus that autonomously appearing is greater than the value of current or recent production. This determination can be expressed in terms reminiscent of Keynes' *Treatise on Money,* that if investment exceeds savings, income will expand, and vice versa. That is, total expenditure equals consumption plus investment, income equals consumption plus savings, so that investment minus savings equals expenditure minus income. Consequently an excess of investment over savings implies an excess of expenditure over income.

In order to make sense of these terms, the timing of expenditures relative to the income or changes of income that induced them must be considered. If lags are very short relative to the time period considered, analysis of the type used in Harrod's 1939 essay will indicate the nature of the movement concerned. Thus suppose the accelerator to be, on an annual basis about 2, and level-induced plus autonomous expenditure to be about 95 per cent of total income. Then a rate of growth of 2½ per cent per year will account for change-induced expenditure via the accelerator of 5 per cent of income per year so that total expenditure will be 100 per cent of income and the rate of growth can be continued. As Harrod pointed out, if the rate of growth should be larger, say 5 per cent, aggregate expenditure would tend to exceed income, and an accelerated upward movement could be expected.

If now we introduce lags, it is essentially the same, in analyzing an upswing, as reducing the values of accelerator and propensity. Thus suppose that each year's expenditure is determined as before, the accelerator being 2, and induced plus autonomous expenditure being 95 per cent of income, but depending on the previous year's income instead of on the current year's. Then an initial rate of growth of 2½ per cent a year would not maintain itself as it did in the previous example. The reason is that this accelerator and this propensity, in applying to last year's income and rate of growth of 2½ per cent will

just lead to expenditure *equal* to last year's income, but not to expenditure *greater* than last year's income. Under these assumptions an initial increase of 2½ per cent would be followed by a zero change in expenditure, which would in turn be followed by a 5 per cent decline. If last year's rate of growth were 5 per cent, however, that rate would be continued because the change-induced expenditure ($2 \times 5\% = 10\%$ of last year's income) plus the level-induced plus autonomous expenditure of 95 per cent of last year's income yields an expenditure this year of 105 per cent of last year's income, just sufficient to maintain the 5 per cent rate of increase of expenditure and hence of income.

If, however, expenditure should be lagged three years, no initial rate of increase of income could be maintained with the coefficients assumed.[21] Under such circumstances the cumulative growth of income would soon taper off into a decline and there would be a weak cycle. The existence of the weak cycle thus depends upon the presence of lags, which implies that on the upswing current expenditure induced by the lower incomes of previous periods is not sufficient to maintain the previous rate of increase of income. Of course, the weaker the accelerator and the smaller the propensity, the shorter the lag that will suffice to convert a situation of steady growth into one of cyclical fluctuation

A general theory of the business cycle can thus be expressed as the manner in which the expenditure of any period depends on the income and changes of income of that and the preceding periods as well as on autonomous expenditure. For any specification of the nature and timing of that dependence and of the autonomous expenditure, a particular path of expenditure will be traced out. Up to now it has been assumed that expenditure sets the level of real income. A further amendment of the general theory can be introduced by allowing for a price as well as a real income change in response to a change of expenditure. The above generalization of Mr. Hicks' model leaves room for almost all theories of the business cycle previously advanced. Economic phenomena are varied and complex, so any comprehensive theory of the business cycle that can apply closely to reality must be very complicated, but almost all the complications that any theorist would care to consider can be incorporated in this generalized model.

The Downturn

From the preceding discussion it may be concluded that a downturn can be brought about by: (1) A decline in autonomous expenditure. (2) The interaction of accelerator and propensity—a weak cycle. (3)

[21] See my article, *Quarterly Journal of Economics*, Vol. LXIII, No. 2 (May, 1949), for a discussion of the conditions in which steady growth is possible in such a model.

A change in the coefficients. (4) A limitation on the rate of growth of income.

A downturn of income starts simply when expenditure turns downward. This may occur for a variety of reasons. Autonomous expenditure, since it is autonomous, may turn down and so initiate a cumulative downward movement. Mr. Hicks assumes autonomous investment to proceed smoothly and therefore his readers may miss the important point that fluctuations of autonomous expenditure may possibly either reverse or accelerate a cumulative movement that is under way. Mr. Hicks lays great stress on the importance for cycle theory of the concept of steadily growing autonomous investment, an importance which this reviewer questions on two grounds. Its inclusion does not modify the general theory except by an additive component, that of super-multiplied autonomous investment. Secondly, the fact that the timing of otherwise autonomous investment depends on the phase of the cycle is very important for cyclical theory, since it, essentially, leads to a change of the coefficients. This factor may be lost from sight if it is assumed that autonomous expenditure grows steadily. There is no objection to the assumption that there is a steady trend of autonomous expenditure about which actual autonomous expenditure fluctuates, either independently or with induced timing.

The weak cycle, dependent on lags and low values of accelerator and propensity, seems to afford an explanation of the downturn applicable to several turning points in the past. In particular the downturns of 1949, 1937, 1926 and 1923 were quite possibly of this sort. In these downturns inventories seem to have played a major rôle.

It is quite possible that a weak cycle ends because the accelerator and propensity, previously large enough to have accounted for steady upward movement of an explosive sort, change values so as to lead to a downturn. Mr. Harrod, in *The Trade Cycle,* laid great stress on this sort of development. The existence of timing-induced autonomous investment introduces a possibility of a reduction of the propensity after high levels of income have been attained, thus leading to the sort of downturn characteristic of a weak cycle. Such a development has long been recognized in business cycle theory as the satiability of investment needs. In the upswing of the cycle accumulated autonomous investment needs begin to be met and in full prosperity such investment may constitute a large part of total investment. But timing-induced autonomous investment, by its very nature, does not proportionally respond to increases of income and so, beyond the levels of income at which no significant additional autonomous investment is timing-induced, the growth of income may not induce sufficient investment to support the rate of growth. Then at the downturn, not only the

change-induced investment, but much of the timing-induced autonomous investment may dry up and so intensify the downswing. If the upswing lasts a long time, there may be a slackening of timing-induced autonomous investment well before the downturn, thus speeding the downturn. On the other hand, the timing-induced investment may, like the rest of autonomous investment, continue after the downturn and so help limit the downswing, as in an inventory recession that does not develop into a depression.

Similarly, if the accelerator, narrowly defined, leads during the upswing to more investment than is required for the expansion that is taking place, the basis is laid for a subsequent reduction of the accelerator since later expansion of output can then utilize the extra capacity acquired in the early recovery. Similar considerations apply to inventories, especially since the latter may be built up on the basis of speculative anticipations. Factors such as these may lead to a downturn before encounter with the ceiling.

Hicks seems to lay principal stress on the encounter with a production ceiling as the explanation of the end of the boom. Actual experience in wartime with the level of production meeting the limitation of productive capacity suggests that the situation at the peak of most business cycles is considerably different.[22] It may be true that there is an upper limit on investment imposed, not so much by productive capacity as by the habits of businessmen and possibly by short-term bottlenecks. That is, toward the peak of a cycle higher rates of increase of income may no longer induce correspondingly higher levels of investment. Something very much like a ceiling may exist as a result of a reduction of the value of the accelerator associated with entrepreneurial behavior at higher levels of prosperity, even though the economy may still be physically capable of expanding at a more rapid rate.

Not only does it appear doubtful that upswings have in the past been reversed by encounter with the ceiling, but, contrary to Mr. Hicks' argument,[23] a downturn does not necessarily follow an encounter with the ceiling. A simple artificial example may serve to establish this point. Suppose that the propensity to spend is .95 lagged one year and the accelerator on an annual basis is 2.1 so that each year's income is given by the expression

$$Y_t = .95\ Y_{t-1} + 2.1\ (Y_{t-1} - Y_{t-2}).$$

Suppose further that the ceiling rate of growth is 6 per cent. If the ceiling is encountered when the rate of growth of income immediately

[22] J. S. Deusenberry, "Hicks on the Trade Cycle," *Quart. Jour Econ.*, Vol. LXIV, No. 3 (Aug., 1950), also questions whether many cycles, in fact, collapsed because they reached the limit of production.

[23] P. 100.

before the encounter is much larger, say 15 per cent, the equation above would yield an expenditure 22 per cent above that of the previous year. This could call forth an increase of production only of 6 per cent, the remainder of the increase of expenditure presumably going into higher prices. The next year's expenditure can be ascertained from the formula[24] to be about 7 per cent greater than the expenditure of the preceding year which will again bring out an increase of about 6 per cent in physical output, the remainder of the expenditure going into higher prices. From that time forth this pattern will be repeated each year, a 7 per cent increase in expenditure calling forth an increase of 6 per cent in production, the ceiling level of increase. The particular example given above has in Mr. Harrod's terminology two warranted rates of growth, one of 5 per cent a year and one of 100 per cent a year. If the ceiling rate of growth is between these two warranted rates, the ceiling rate of growth can continue.

If we may assume that the lag of consumption behind income is negligible, and that saving minus autonomous investment runs at a very small proportion of the national income, then a rather modest ceiling rate of growth would be sufficient to perpetuate itself. Thus, if level-induced expenditure plus autonomous expenditure should come to about 98 per cent of current income, and if the accelerator should be of the magnitude of 1 or more on an annual basis, then a ceiling rate of growth of 2 per cent would be sufficient to permit maintenance of the ceiling rate of growth.

The Upturn

There seems to be no serious competitor of the termination of disinvestment and the presence of autonomous expenditure for explaining an upturn. Certainly one of the most important factors generating an upturn is the termination of disinvestment in inventories. This can be expected to lead to a higher level of income at which disinvestment in capital goods is reduced, and eventually some net investment induced, and then the accelerator can really come into play so as to help generate a cumulative upward movement.

The existence of minor cycles, in which net investment remains well above zero must depend either on a very high level of autonomous investment relative to induced investment, or a low sensitivity of part of induced investment to moderate changes in the level of income, or both. Thus the typical inventory recession can remain merely an inventory recession only if non-inventory investment is fairly well maintained throughout. Otherwise it would develop into a great depression.

[24] Assuming the income appropriate for inclusion in the formula is real rather than money income.

One of the major uncertainties that characterizes any downturn, when viewed contemporaneously, is whether it will cumulate or be reversed. That question depends only in part on fundamental conditions such as the strength of autonomous investment, but also in part on a circular relationship of investment to the level of output. For if fixed capital investment is maintained, it will be justified by the recovery after the inventory cycle is past; if it is abandoned, that abandonment will be justified by the great depression which will develop. The uncertainty at the downturn is thus inherent in the circular self-justification of aggregate investment.

It is possible that the insensitivity of certain types of expenditure to the cyclical movements of income that, because of that insensitivity, turn out to be minor cycles could be explained by lags. If there were a very long lag of investment or consumption expenditures behind the income and income changes that induce the expenditures, much of the expenditure in the downswing of a minor cycle would be induced by the levels and growth of income from the periods before the downturn. It seems more realistic to assume a variable propensity and accelerator, rather than so long a lag. Some downturns may not discourage consumption and long-term investment and others may. Some room must be left in business cycle theory for the human factor, especially for expectations. The extreme mildness of the recession of 1949 can be explained by the strength of autonomous investment, the weakness of induced disinvestment except in inventories, and the complete suspension of the propensity in that personal consumption expenditure rose in the face of declining disposable income. The Hicksian analysis can fit such a development only if applied in a manner far more flexible than is implied by Mr. Hicks' presentation.

The Monetary Cycle

The monetary factor most stressed by Mr. Hicks is the interest rate. As a result Hicks goes against the popular opinion that the interest rate can do little toward stabilizing the cycle, and concludes that an interest rate policy can in principle act as an efficient stabilizer.[25] He admits "that it can only claim to stabilize the economy on (or in the neighbourhood of) the equilibrium line";[26] He fails to point out that the equilibrium line, which is "super-multiplied" autonomous investment, a moving Keynesian equilibrium, may fall far below full employment. Mr. Hicks admits that a low rate of interest can not greatly stimulate investment in a depression. Use of a high rate of interest to cut down the level of investment at an income which is

[25] P. 164.
[26] P. 165.

less-than-full-employment income but above the Hicksian-defined equilibrium is highly questionable.

Instead of resuscitating the interest rate as an anti-cyclical factor in the conventional way, Mr. Hicks' theory seems to indicate, at certain points, a contrary policy. Thus, if in fact the limitation on steady growth at the ceiling is the inadequacy of change-induced investment, and if in fact a lower rate of interest would induce more investment, a low rather than a high rate of interest would be desirable at the ceiling. If the low rate of interest does not induce sufficient additional investment, additional autonomous expenditure would seem to be required, such as might be achieved by governmental expenditure or governmental stimulation of private expenditure.

Conclusions

Mr. Hicks furnishes a most useful skeleton outline of the business cycle. But it is too rigid a skeleton, flexibility must be introduced and the relationships broadened and generalized. Once the concepts of accelerator and propensity are broadened to cover in a flexible manner all change-induced and level-induced expenditures as well as timing-induced autonomous expenditures, there is room for a great deal more flesh on the skeleton than Mr. Hicks has put on it. With that additional flesh, however, this theory of the cycle presents a number of features that may be recognized in other, older, business cycle theories. Mr. Hicks' cycle looks different from other theories of the cycle because only the bare bones show. Those who object that Mr. Hicks' presentation is oversimplified and too monistic and rigid will find that the qualifications and multiplicities they wish to introduce can easily be fitted on the framework he provides.

A Note on the Definition of Equilibrium

Unfortunately, Mr. Hicks uses the term equilibrium in a confusing manner. There is one concept of equilibrium usually used by Hicks which makes good sense from the mathematical formulation of his theory. The behavior of income over time can, in a linear model such as is used by Mr. Hicks, be expressed as a sum of a number of components. All but one of these depend on the initial levels of income which set the process off; the one component which is independent of these initial conditions is "super-multiplied" autonomous expenditure. That component may advantageously be regarded as the equilibrium value of income. If the levels of income which initiate the sequence should be exactly equal to that component, all other components are then given zero weights, and income will trace out its equilibrium path. Needless to say, an equilibrium so conceived is not in any sense normative; it has nothing to do with full employment,

or where income should be. It is merely a convenient conceptual basis from which cyclical fluctuations or nonautonomous growth can be measured.

There is another concept, first developed by Mr. Harrod, of the warranted rate of growth, which depends on propensity and accelerator but not on autonomous expenditure. Sometimes Mr. Hicks considers such a warranted rate of growth, which he calls the regularly progressive economy, as an equilibrium path. Mr. Hicks, in Chapter V, considers the conditions under which the two components, the warranted rate and the super-multiplied autonomous expenditure, will have the same rate of growth. The sum of two components each growing at a steady percentage rate can itself grow at a steady percentage rate only if the rates of growth of the two components are equal. It seems to this reviewer that no particular interest attaches to this situation, which should be regarded as highly coincidental, so that the propositions of Chapter V concern a highly special concept of equilibrium and steady growth. Such statements as "Autonomous investment itself will have to increase at a constant rate of growth if equilibrium is to be maintained," "Provided the rate of growth is properly chosen, the regularly progressive economy can remain in equilibrium without fluctuation," "If the rate of growth of output is given, autonomous investment must have the same rate of growth," and "Autonomous investment must expand uniformly if the economy is to remain in progressive equilibrium," are either untrue or true only when a very limited meaning is given to equilibrium or steadily progressive equilibrium. Thus, from the point of view of Chapter V, if income as governed by the Hicksian model should be composed of one component steadily growing at 2 per cent a year and a supermultiplied autonomous expenditure steadily growing at 3 per cent a year there is no steadily progressive equilibrium, while if the two components both grow at 3 per cent a year there would be a steadily progressive equilibrium. The unwary reader might erroneously infer that the movement not in equilibrium was necessarily less smooth, or in some way less desirable, than the movement in equilibrium. It would seem advantageous to reserve the concept of the equilibrium path to the super-multiplied autonomous expenditure. Steady growth of income need not be called the equilibrium rate unless it happens to be at the rate of growth of autonomous investment. Autonomous investment should certainly not be assumed to grow steadily. The sum of components each growing at a different steady rate need not be intrinsically less interesting than the sum of components each growing at the same steady rate. In fact, much of Chapter V seems, to this reviewer, inappropriate or misleading, in contrast to the clear and helpful presentation of most of the rest of the book.

GOLD IN SOVIET ECONOMIC THEORY AND POLICIES

By ALFRED ZAUBERMAN*

A year has passed since the Council of Soviet Ministers put the rouble on a "gold basis" corresponding to its gold content. The present article discusses this Soviet move against the background of Soviet theoretical thought on gold in the last three decades.

I

There has been and still is little quarrel among Soviet economists on gold in the context of the capitalist society. The *point-de-depart* is the well-known Marxist proposition that gold being a product of labour is equivalent to any goods of equal labour content,[1] while paper money is equivalent to the quantity of gold which it represents "symbolically."

How far is Marx's teaching on money applicable to an economy at the stage of the dictatorship of the proletariat? On this point the contending schools parted way very early, at the time of the Soviet community's childhood.

The Preobrashenskij School's answer was that this teaching had general validity but it did not prejudge *per se* the issue of preserving money in the post-revolutionary community.[2] Money in fact would be doomed to die away in such a society, though the process would depend *on the type* of society passing through its proletarian revolution; it might be a prolonged one since the self-depreciating money would become a useful tool of Marxist "primary accumulation," at the expense of the disintegrating small-capitalist class. This clearly absolved the school from speculating on the rôle of gold in the post-revolutionary epoch's economic system.

Events outpaced Preobrashenski's vision and while depreciation and virtual repudiation of money forced the system into the straitjacket of a primitive barter economy, theoretically minded economists were constructing models based on a money-free calculus.[3]

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[1] Karl Marx, *Capital*, Vol. 1 (English translation, London, 1938), p. 105.

[2] E. Preobrashenskij, *Bumashniye Dienghi v Epokhu Proletarskoj Diktatury* (Moscow, 1920) and *Finansy v Epokhu Diktatury Proletariata* (Moscow, 1921), pp. 71 *et passim.*

[3] The most outstanding for its elaborateness and intellectual finish was Professor S. G. Strumilin's conception, *Probliemy Trudovogo Uchota* (Moscow, 1920). He tried to reconcile labour value calculus with a marginalist approach.

It is hardly necessary, I believe, to retell here the well-known dramatic *volte-face* at the very moment when the anti-money tendencies seemed at last to be victorious. On both the theoretical and practical planes it is legitimate to connect this victorious counter-current mainly with the names of L. N. Jurowskij and G. Ya. Sokolnikov.

According to Jurowskij, there was actually little choice for the reformers but to follow a spontaneous push of the forces of the economy which by 1922 restored gold to wide circulation in the country.[4]

This, of course, gives only one aspect of the reality; when a return to the mixed NEP model was decided upon—the need for media to stabilise prices and open up the economy for foreign trade strongly recommended a gold-backed currency.

Sokolnikov seems to have had a wider perspective of theoretical horizons. The problem to him—unlike Jurowskij—was not only one of expediency; his was the classicist idea of the rôle of gold and his choice was only limited to its traditionalist and more economical modernised gold-exchange-standard version. He came out for the latter.[5]

Practical policies followed the victory of the Jurowskij-Sokolnikov school, clearly endorsed by Lenin himself.[6]

By the end of 1922 the Reform was well on its way. The Bank's reserves were swelling. In 1923 it was strong enough to carry out the "currency intervention" (perhaps this *was* the point at which saturation of internal circulation with gold was considered).

Despite its victory the Sokolnikov-Jurowskij school still had a hard struggle to wage.

A series of Strumilin's articles in *Ekonmicheskaya Zhisn* branded the reform as anti-Marxist. Sokolnikov's riposte is worthy of restatement since we will hear its echo a quarter of a century hence.

> . . . The most remarkable thing is that Comrade Strumilin *slips down into nominalism* (italics supplied) and against all the consistent Marxist theory denies the inter-connection of gold and paper money. . . . Strumilin's theory of money would have ground had we a fully socialist com-

[4] L. N. Jurowskij, *Na Putiakh k Dienieshnoj Rieformie* (Moscow, 1924), pp. 68-69.

[5] G. Ya. Sokolnikov, *Gosudarstviennyj Kapitalizm i Novaya Finansovaya Politika* (Moscow, 1922), p. 10 and *Probliemy Finansovogo Stroitielstva* (Moscow, 1923), p. 17.

[6] In his earliest writings Lenin seems to have given little or no thought to the institutional problems of money and gold. There is some evidence that later on, in fact as late as 1921, he was leaning towards Preobrashenskiy's doctrine. That year he seems to have changed his mind on the subject, since it was he who prepared a resolution voted in due course by the 9th All Russian Congress of Soviets approving the restoration of "rational money circulation on the basis of a gold currency—with utmost effort and urgency." There is some evidence to believe that about 1922 he toyed with the idea of introducing gold into the internal circulation. Soviet writers would of course not admit to Lenin's vacillations.

munity and not an economy of the predominantly small commodity producer and were we not dependent on the external markets still under the sway of capitalism. . . .[7]

II

When the mixed system of the NEP was coming to its close its money concept was of necessity becoming obsolete. The team of the Planning Commission which led the work of reshaping the economic model firmly believed that the end of the money-price and wage mechanism was at last in sight;[8] but once again such ideas were found to be premature and were abandoned. Another reform, that of the early 30's, brought the Soviet money mechanism into line with the working principles of an almost fully collectivised and fully planned system. Within the sphere of production the rouble ceased to serve as a vehicle for the transfer of purchasing power and became an index-unit for efficiency control. In the realm of consumption the rouble now had to serve as a sort of a generalised "ration-card" in a classless society living almost entirely on wage-type incomes.[9]

It would seem that in this money system there could hardly be any scope for a gold "basis," whatever this vague term, so much in vogue in present-day Russian literature and practice, connotes.

All the settlements with the outside world and all the financing of foreign trade are made in foreign currency (or gold shipments). True, a basic—a French franc and since 1937 a dollar—"parity" for the rouble was quoted. But since the economy has gradually assumed the pattern of a closed one (in the sense that links between the Soviet and external price levels have been severed and that the price-cost imputation of imported goods has become a purely conventional accountancy device),[10] parity has become almost void of any economic meaning.

However, even though the new money system is supposed to have reached its final shape—there is still a noticeable under-the-surface simmering of the old dispute.

One of the main inheritors of the non-money philosophy, Professor Notkin, stresses in postwar literature the primacy of physical terms calculus and argues that the "commodity money form"—apart from cost accounting—is merely convenient as a material stimulus supple-

[7] G. Ya. Sokolnikov, *Finansovaya Nauka* (Moscow, 1930), pp. 101-2.

[8] L. M. Gatovkij, "O. Prirodie Mienovykh Sviaziej na Novom Etapie" in the *Na Novom Etapie Sotsialisticheskogo Stroitielstva,* edit., G. M. Krshyshanovskij.

[9] *Cf.* the present writer's "Economic Thought in the Soviet Union" in the *Review of Economic Studies* (1949-50), pp. 107 *seq.*

[10] Z. Atlas and N. Grodko, "Mieshdunarodnyje Raschoty i Krieditovanije Vnieshniej Torgovli SSSR" in the *Dienieshnoje Obrashtchenije i Kriedit SSSR* (Moscow, 1947), pp. 402 *seq.*

menting the main purely social stimuli and direct "forms of control." Such a proposition would imply that, already in the socialist stage on the path towards communism there is no logical necessity for money and that it could be dispensed with provided an equipollent mechanism of stimuli were put into operation.[11]

In fact, there seems to be strong evidence to support the contention that the basic allocation of resources is performed in the U.S.S.R. in the physical term plan.[12]

Those who subscribe to the ruling school, however, maintain that quite apart from the problem of incentives socialist society has no alternative to money calculus either in measuring results of work or in distribution. Suppose a product proves *ex-post* to be in deficit. "Applying labour time calculus," says Professor Atlas in a recent work "assumes that changes in quantity of products do not influence their labour valuation. A rigid labour valuation at a given level of labour productivity would imply an impossibility of reducing demand . . . by economic measures. To change labour valuation of a given commodity by adjusting it to the demand-supply position would mean discarding the basic principle of the labour-time calculus, *i.e.* discarding the very principle of the socially necessary labour which has actually been spent on it."[13] *(Would not this statement mean that money calculus has to be accepted—if not for other reasons—at least to protect the labour theory of value from exposing its inadequacies in operation?)*

Anyway, experiments of the last twenty years have apparently convinced Soviet rulers that no system of economic controls or checks so far conceived is purposeful enough to replace that of the money costs-price calculus, at least in the scale of the whole economy or of whole industries and their groups. This seems to be the root reason of the officially blessed efforts to inspire in both the sphere of production and consumption a conviction of the "reality" of Soviet money, whatever the meaning of this loose term. Though financing individual State enterprises with grants from the general budget is in no way incompatible with a rigorous rule of maximising their accountancy profit, there is a growing tendency to discard the grant-system with the obvious view of strengthening the "money morale" of the management. Similar

[11] Z. Notkin, *Otcherki Ticorii Sotsialistitcheskogo Vosproizvodstva* (Moscow, 1948), p. 49 *seq.* On the theoretical plane there is also involved the problem of law of value in the socialist community. At a special meeting of the Institute of Economics, Professor Petrov ably expressed the official criticism's view when he said: "With Notkin the Law of Value is like God with the deists. He exists but he does not act." *Cf.* a report in the *Voprosy Ekonomiki,* N. 4/1948, pp. 82 *seq.*

[12] E. Lokshin, Planirovanije Matierialno-Tekhnitcheskogo Snabzhenija Narodnogo Khoziajstva" in *Planovoie Khoziajstvo,* N. 2/1950.

[13] Z. Atlas. Dienieshnoje Obrashtchenije v Sovietskoj "Sistiemie Kheziaistva" in the "Dienieshnoje. . . ." (ut supra), p. 15.

considerations have certainly been influencing the government with respect to the wage-retail-price mechanism. Since the abolition of allowances in kind and derationing, cash earnings have been strengthened in their rôle of the main labour incentive and here again an appeal to the worker's imagination of the "real money" argument has acquired particular importance. Reference to the money's "gold basis" (again—whatever this loose expression may mean) has apparently commanded itself as a psychologically useful expedient.

In economic writing a vigorous resumption of the anti-nominalist crusade is a significant corollary to the trend of practical policies.

One is almost tempted to venture the paradox that during the last twenty years the Soviet money doctrine has completed a full circle; that in fact the hands of the clock were put back even beyond the original Jurowskij-Sokolnikov position (the latter questioned his opponents' "nominalist" approach only in the historical context of the mixed and semi-open economy of the time). Of course this statement carries the risk of superficiality. The Jurowskij-Sokolnikov school stood for a money-commodity equilibrium looked after by a gold-exchange-standard; translated into the problematics of the early 30's this meant brakes being put on industrialisation and retarding the setting-up of the state-socialist economy. Since, however, the latter model has now become firmly established, the basic Jurowskij-Sokolnikov approach is certainly anachronistic to-day. But the more striking are the analogies of *looking to gold* in the quest for a firm standard of money in so diametrically different economic settings.

The "pro-gold" tendencies have revealed themselves significantly in an important book on the rôle of gold in the two world wars by an eminent Soviet expert, Professor Mikhalevskij;[14] the main impact of his criticism was directed against the "Hitlerite theory of demonetization of gold" with its roots in Germany's plans to obviate international trade by eventual division of the world into a few autarchic areas; and primarily in her lack of gold resources—the fable of the sour grapes (clearly the fable yields its moral *à rebours* as applied to the Soviet Union, considering her potential capacity in gold mining).

The doctrine has recently been presented more eruditely and against wider horizons of economic history and thought, by Dr. Eidelnant.[15] At the dawn of the capitalist era—his argument runs—the nominalistic tendencies sprang from a sound and progressive demand for expanding the framework of the monetary system, in step with economic growth. Since the beginning of the twentieth century (Eidelnant elaborates Mikhaleveskij's contention), nominalism has

[14] F. Mikhalevskij, *Zoloto v Pieriod Mirovykh Vojn* (Moscow, 1947).

[15] A. B. Eidelnant, *Noviejshij Nominalizm i Jego Priedshiestvienniki* (Moscow, 1948).

developed in Germany its distinctly anti-English brand caused by her relative weakness in the world gold production and markets—till it became in the 'thirties a doctrine of German economic aggression; in its turn, an English version of nominalism has gradually developed as a theoretical basis for the defence against the "dollar—dictatorship" (the author is happy of course to have here his occasional dig at the Marshall plan); Keynes comes up for the usual criticism, as a protagonist of the school which "tried to prove that by means of money freed from . . . 'harmful' (the author's quotation marks are eloquent) requirements of the gold standard one can allegedly control . . . the capitalist trade cycle, secure boundless growth and do away with unemployment." Eidelnant's attempt at a general diagnosis of the *"nominalistic complex"* would show as its common symptoms: (a) "a negation of the use-value of money"; (b) "an identification of metallic and paper money"; (c) "a reversal of classical teaching on the nature of relationship between the value of precious metals and money and, consequently, of the classical teaching on monetization."

Thus Dr. Eidelnant is proud to redeem for the socialist world the firm ground of Marx's original doctrine, which seemed to be lost in the process of the construction of socialism (K. Marx, *Critique of Political Economy,* p. 142).

One may feel warranted in assuming that it was not for the intellectual satisfaction of asserting the catholicity of Marx's doctrine of gold that anti-nominalist tendencies have recently received a remarkable spur and encourgement in the Soviet Union. After all, it is not so long ago that no less an authority than the Director of the Institute of Economics of the Academy himself made a frank statement that Marx's vision of the distributive mechanism in a *socialist* community proved to be utterly wrong.[16] Perhaps even today Marx's anti-nominalist vindication is by implication non-Marxian since it claims universal validity for his theorems outside their historical framework.

As we have tried to show, there seems to be a strong interconnection between the trends in literature and the requirements of practical economic policies for the restoration of the belief in the *"reality"* of money.

Meanwhile new elements in the sphere of international economic relations have appeared which have reinforced the "real" money tendency. The present gold "content" of the rouble is as meaningless as was its previous gold parity; it is especially irrelevant as an expression of either relative purchasing power or—on Marxian grounds—of gold production cost. The new formula, however, is more compatible with Russia's assumed rôle of hegemon of a great economic

[16] K. Ostrovitianov, in the *Voprosy Ekonomiki,* N. 1/1948.

area. With the growing measure of integration and socio-economic structural assimilation of this area, the main centrally made economic decisions, and consequently the inter-State movements of resources, have grown by now independent of relative money price-and-cost considerations; precisely as are analogous decisions on the allocation of resources in the U.S.S.R. (*ut supra*). This does not preclude, however, that for inter-State economic relations of the area some more or less conventional rouble-price accountancy will be found appropriate; the recent translation into the rouble of the published data on these States' trade and financial relations with U.S.S.R. seems to show this. "The Soviet rouble becomes an instrument of a planned development of the economic relationship between the Soviet economy and the economies of popular democracies," Professor Koslov recently wrote.[17]

For a somewhat distant future a gradual introduction of the rouble into the internal circulation of individal countries of the Soviet sphere of influence may be a plausible contingency. The Polish November reform which put the zloty on a rouble "gold" parity is clearly a step in this direction (the more so as the old zloty conversion rate seems to have been chosen with the view of unifying the existing *money*-wage systems and thus preparing for the final phase: that of unifying *real*-wage systems after internal prices have been adjusted.) True, from the angle of this gradual process of integrating wage-price structures on the rouble basis the gold "content" is irrelevant as well; anyway, to state that a socialist trading area would fare best with gold as the basis of its own economic relationship is a rather far cry even from the concepts of the Jurowskij-Sokolnikov school. But there again linking the individual currencies at par with the gold-based "strongest world currency" suggests itself as a psychologically useful expedient.[18] Thus the requirements of Russia's new status in the world have not only strengthened the *"real"* money ideas which have taken root in internal economics but have called on the theorist to expound the idea of the real *world* currency, a task fulfilled at this juncture by the economic literature under Professor Mikhalevskij's leadership, which duly points out the gold rouble's natural predestination for this rôle, as contrasted with Western currencies "void of intrinsic value."[19]

III

Our historic account, if correct, would suggest that the newly accepted dogma of metallic basis and content of the rouble is some-

[17] G. Koslov, in *Voprosy Ekonomiki,* No. 3/1950, p. 30.

[18] *Cf.* Z. Atlas in *Gospodarka Planowa,* N. 7/1950 and Janusz Malicki, *op. cit.*, N. 11/1950.

[19] F. Mikhalevskij, "Zoloto kak Mirovyje Dienghi i Valiutnyj Diktat," in *Voprosy Ekonomiki,* No. 1/1950.

thing to be interpreted in terms of domestic economic policy as well as in relation to the international position of the Soviet Union.

Most recent developments seem to confirm the contention of the growing emphasis on the "reality" of money in internal economic calculus. During 1949 the Soviet government definitely did away with the system of grants to cover deficits in heavy industries and, on the quiet, raised the latter's release prices; the mark seems to have been overshot and the following year (1950) witnessed sharp cuts in iron, steel, cement, heavy chemicals and machinery prices ranging between one and two-fifths. The trial-and-error readjustment process has been used to impress on industrial management the importance of a strict money economy regime, though it has been frankly admitted in literature that the problem has not yet been satisfactorily solved;[20] one is allowed only to guess how far this is due to the intrinsic difficulty of making "real" money make-believe profits a stimulus, especially in conditions of conventional rigid supply and release prices for plants on different levels of technico-economic efficiency.

As to the international aspect, the shift of the centre of gravity in Soviet trade away from the world outside her politico-economic Orbit should certainly be borne in mind. Although the foreign trade turnover of the U.S.S.R. is reported to have doubled during the last decade, the increase is said to have been entirely due to the growth of her intra-Orbit exchanges, which has come to account for two-thirds of the Soviet total; in real terms the volume of trade with the rest of the world has very probably shrunk by half in that period,[21] and the deadlock in the West-East economic relations discourages expectations of a reversal of this trend in a foreseeable future. It would hardly be wise strategy on Russia's part to force the rouble on her Western trade partners at this unfavourable juncture. Forecasts of such a course have been belied by the facts—so far.

Now it is, I believe, a debatable point whether and how far the Soviet Union would have to readjust the officially proclaimed rouble parities were she to choose to internationalize her currency. Even more questionable seems to me the widely held view that this would involve radical changes in her pricing principles, or at least reshaping her actual price structure.[22] Her method of price imputation of foreign-trade-goods in the domestic cost-accountancy; her fully monopolistic state trading system coupled with a strict policy of a near-balance in her receipts and payments in current account, might secure to the

[20] *L. Maizenberg*, "Sistiema Optovykh Tsien i Ukrieplienie Khozraschiota" in *Voprosy Ekonomiki*, No. 2/1951, p. 59 *seq.*

[21] United Nations, *World Economic Report, 1949-50*, preliminary edition, p. 160, *seq.*

[22] *Cf., int. al.*, M. R. Wyczalkowski, *Staff Papers, International Monetary Fund*, Vol. 1, No. 2.

present parity, much as it is over-valued in the light of any purchasing power computations, an appearance of a true equilibrium rate; at least these appearances could be kept up by a small sacrifice. Yet the U.S.S.R. has apparently not found it advisable, or worth while, to submit her currency to the test.

It *is* a somewhat curious phenomenon to watch with what obstinacy it is repeatedly asserted that

> USA tries to impose on the whole world the paper dollar as the foundation of international settlements, as an international currency. But it is well known that it is gold only which can fulfill the role of international money. . . .[23] and

> Placing the rouble on the gold basis means that the rouble is the only currency in the world with a hard, gold content . . .[23]

—as against policies actually pursued. I am afraid delving further into this baffling dichotomy of the spheres of word and deed would lead to the study of semantics or the psychology of the Soviet Union's over-all strategy in world relations. The fact is that since the gold-rouble proclamation no marked changes have been noticed in the technique of her payments outside her own Orbit; no inhibitions are shown in carrying on her trade as before in dollars, sterling and other foreign currencies generally acceptable to her partners; and while the obvious aim is to equalise the current bilateral, largely barter, accounts, deficits oscillating around a mere 50 million dollars a year are apparently being settled with gold shipments and/or most probably with currencies earned by countries of her Orbit who accumulate a surplus with the rest of the world. Many a symptom points to the economic resources of the Soviet Orbit being pooled in this field in the same way as they are in others. It is, however, with respect to the Orbit that the problem of internationalising the rouble seems to have acquired some relevance, provided specific meaning is attached to the concept.

Many Marxists believed that geopolitical changes brought about by World War II had at last challenged them with the urgent and exciting task of drawing up a set of principles and a blueprint of a mechanism to operate in economic relations between highly collectivised States. The question at issue seemed to them to be, not only how to secure an optimum division of labour of a Socialist family of nations, but also the additional one arising out of discrepancies in this family members' economic development, as expressed in their different labour intensity and productivity;[24] *i.e.*, in the question—what should

[23] Professor Koslov, *op. cit.*, pp. 27, 28 and 30.

[24] K. Marx, *op. cit.*, p. 572.

be the rules of the game to temper the iniquities of one nation getting more work for less work. The Soviet Union's determined policy of a speedy integration of the Orbit has mercifully relieved the eager minds from the formidable task, at least in our day.[25]

The suggestion has been widely made that the knitting together of an area of free multilateral transfers was Russia's aim in calling to life the Council for Mutual Economic Assistance. Yet the multilaterality of trade exchanges and transfers within the Orbit appears to differ only in degree, not in essence from that which exists between different provinces of the same area, or—in a vertical plane—between different "combinates" subject to the same centre of decision. What is, in accepted parlance, confusingly referred to as trade agreement between the Soviet Union and a country of her Orbit has been ably and frankly described[26] as least by one author East of the Elbe as being "nothing else but a Plan and bearing all the characteristics required by the notion of Socialist planning." The point is that far from being a kind of a friendly oligopoly, the Soviet-Socialist Orbit is an area of centralized planning with very limited reference to national boundaries.[27] Consequently, the problem whether and what sort of money should exist in the inter-member relationship, a unit of account or a means of payments, is being gradually solved on the same principles as it has been internally. I ventured to submit earlier in this article that outside the sphere of consumers' earnings and spendings the rouble in the Soviet Union is merely an accountancy unit. This becomes true, at a pace accelerated since 1948, in the Soviet-Socialist *inter*-State model. Nevertheless, many a reason for cultivating the

[25] For a voice of frustration, *cf.* Milentije Popovic, *On Economic Relations Among Socialist States* (London, 1950). Before the last war, when the problem had a purely academic interest, attempts to formulate the rule of the game were made only in Western writings, *cf. int. al.* G. D. H. Cole, *Studies in World Economics* (London, 1934), *passim,* particularly pp. 178 *seq.* on "constructive bargains."

[26] Adam Mazurek, *Wykonywanie Planow w Polskim Handlu Zagranicznym* (Warsaw, 1950), p. 35.

[27] Professor Viner anticipated essentially the point at issue as early as 1944, though his approach referred to a socialist community of nations as visualised by Marxians, not to one of the pattern shaped by the Soviet Union in the years to come—this *Review,* Vol. XXXIV, No. 1, Pt. 2, Suppl. (Mar., 1944), p. 328. I regret having become acquainted with Mr. Michael L. Hoffman's illuminating paper on the problems of trade between planned economies and with the ensuing discussion (*cf. American Economic Review,* May, 1951), only after the final draft of this article was completed.

I have found myself in agreement with Mr. Hoffman's contention that none of the things particularly emphasized by pre-war socialist literature characterizes the economic relations at present prevailing among the States of Eastern Europe; in fact I am disinclined to accept the term "trade" with reference to these relations. On the other hand I join Mr. Suranyi-Unger in his view on the existence of a consistent over-all plan governing the inter-State flow of goods and services in the Soviet Orbit; but again I definitely subscribe to Mr. Hoffman's opinion that this flow is completely dominated by Russia and her politico-economic *raison d'etat.*

doctrine of "real" money militates in the latter model *a fortiori;* in so far as members of the Orbit build up account-rouble holdings, it is convenient to have proclaimed as a point of orthodoxy the dogma of the rouble being "real" money vested with all its classical functions (that of a means of payment and of a store of value included) by virtue of its metallic basis and contents, however shrouded in mysticism these may appear to a theoretical analyst. The essential fact is that such holdings in the hands of any member-state of the Orbit do not give much stronger claims on goods, gold included, than those in the hands of a manager of an industrial plant; they are not a source of liquidity, hence there is no need within the Orbit of a medium of international settlement agreed upon and commanding general acceptance.[28] In the circumstances, I submit, there is no necessity to readjust the arbitrary parities within the Orbit as a pre-condition of internationalising it in the Orbit. True, I mentioned the tendency of putting members' currencies on the rouble parity; apart from its political significance it seems to be primarily a measure of technical expediency at this stage, and an indication of the possible eventual introduction of the rouble into their internal circulations; this would contribute to streamlining the over-all planning and thus to the economic homogeneity of the Orbit; it has been suggested in this article that one could discern a tendency to level out, step by step, the average real cost of labour as a condition of such a process. Incidentally, this might be shown to be in keeping with Marx's teaching

[28] Ragnar Nurkse, *Conditions of International Monetary Equilibrium* (Princeton, 1945), p. 29.

An important paper by I. Zlobin, "Sovietskij Rubl' Samaja Protchnaja Valiuta v Mirie" in *Voprosy Ekonomiki* (No. 7/1951, pp. 89 *seq.*) which appeared after this article was set in print made several admissions, at least three of which seem to be of particular relevance for our subject. *Firstly,* the socialist countries' camp, we are being told, "tends towards its own price-basis and its own money-scale of settlements in conformity with its social structure" and has discarded world prices in its members' relations. Note that while the claim of faithfulness to the world price system has been dropped at last, no light has been shed on what was the bearing of the common collectivist socio-economic structure on the intra-Orbit pricing. *Secondly,* the rouble, we are being told, has displaced the USA dollar "as a clearing accountancy unit" and has become "the main and leading accountancy and settlement currency of the entire camp." Note the studied vagueness of the statement with regard to the technique and nature of settlements. And, *finally,* there is at least one indication of the pooling of outsiders' currency by way of some multilateral arrangements with extra-Orbit countries.

The freshness of M. Zlobin's approach lies also in his frank emphasis on Soviet Russia's position as a "major gold producer" as well as in his uninhibited admission of Russia's inability to "disinterest herself either from the problem of gold or from gold resources." There is incidentally an attempt to explain away the Soviet Union's gold sales as a result of non-convertibility of most capitalist countries' currencies rather than of an over-all adverse balance of payments. While this version sounds plausible enough, one may be permitted to presume that it applies to only a part of recent Soviet operations in world gold markets.

on international economics,[29] though what he had to say on their money problems belongs to an analysis of the world of Capitalism and warrants but vague and indeterminate inferences for the socialist and communist future.

At this point, perhaps, it would not be out of place to mention the mutual and incessant exhortations in the Soviet academic world to construct a theoretical model of a Communist economy. Whoever tried his hand at this job met with shattering criticism, an eloquent sign of uncertainty prevailing in this domain. Most recently a distinguished Soviet authority suggested an economic law of development which made a Socialist society gradually strengthen its "real" money system as it progressed on its way towards Communism, then dismantle it when the destination had been reached.[30] The dialectics of the final leap seem to be anything but convincing in this hypothesis.

[29] K. Marx, *op. cit.*, p. 571.

[30] L. Gatovskij, "O Khoziaistvienno-Organizationnoj Diejatielnosti Sovietskogo Gosudarstva Poslievojennyj Pieriod," in *Voprosy Ekonomiki*, No. 3/1951, pp. 15 *seq.*

THE NATURE AND SIGNIFICANCE OF PRICE LEADERSHIP

By JESSE W. MARKHAM*

That the Supreme Court's decision in the *Tobacco* Case[1] of 1946 attaches a new significance to price leadership in oligopolistic markets seems beyond reasonable doubt. The *Tobacco* decision constitutes a reversal of the stand taken by the Court in the *U. S. Steel* and *International Harvester* cases, where the Court ruled that the acceptance of a price leader by the rest of the industry did not constitute a violation of the Sherman Act by the price leader.[2] If we accept the full meaning of what the court has really said, that parallel pricing, whether implemented by an agreement or not, is now illegal, pricing policies prevailing in markets where sellers are few will henceforth be subjected to a much closer examination than they have been in the past.

Accomplished students of the monopoly problem, anticipating what such oligiopolistic market studies might be expected to reveal, have predicted the possibility of some sweeping changes in the conduct of American business enterprise. Professor Rostow, for example, sees in the *Aluminum* and *Tobacco* decisions, when viewed collectively, the possible foundations for a new Sherman Act "which promises drastically to shorten and simplify antitrust trials" since they represent a triumph of the economic over the more cumbersome legal approach to the antitrust problem.[3] Professor Rostow points out specifically that such tacit parallelism, as evidenced by the practice of following a price leader, now lies within the scope of the antitrust laws.[4] Professor Nicholls cautiously points out that the assumptions which he made in his recent appraisal of the *Tobacco* decision,[5] namely, (1) that the

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[1] *American Tobacco Co., et al.*, v. *United States*, 148 F. 2d 416 (1944); 328 U. S. 781 (1946).

[2] *United States* v. *United States Steel Corporation*, 251 U. S. 417 (1920); and *United States* v. *International Harvester Company*, 274 U. S. 693 (1927).

[3] Eugene V. Rostow, "The New Sherman Act," *University of Chicago Law Review* (June, 1947) pp. 567-600. For a warier appraisal of the *Aluminum* and *Tobacco* decisions, see Edward H. Levi, "The Antitrust Laws and Monopoly," *ibid.*, pp. 172 ff.

[4] Rostow, *ibid.*, p. 577.

[5] William H. Nicholls, "The Tobacco Case of 1946," *Am. Econ. Rev.*, Vol. XXXIX, No. 3 (May, 1949), pp. 284-96.

Courts really said what he believed them to have said and (2) that they will carry to their logical conclusion the legal implications of that decision, may rest upon dubious grounds. Nevertheless, he concedes the possibility that such *modi operandi* as price leadership, the presence of which was perhaps the most important piece of incriminating evidence in the *Tobacco* case, are now illegal.

If the legal implications of the *Tobacco* decision as interpreted by Professors Rostow, Nicholls and others be accepted, the economic consequences of price leadership and the specific conditions likely to render it an effective weapon against price competition in oligopolistic markets need to be re-examined. Because the Court has not yet faced up to the problem of providing appropriate remedies, the question of wherein lies the most fruitful remedial action should at least be raised. It is primarily to this task that this article is addressed. Since, however, there is always the danger of assigning unwarranted homogeneity to such an economic phenomenon, its significance will be appraised on the basis of (1) the particular types of price leadership which prevail in industrial markets and (2) the extent to which each type might conceivably circumvent forces of competition.

Professor Stigler has distinguished between two kinds of price leadership: (1) that associated with a dominant firm and (2) that of the barometric type.[6] Since, however, one of the market conditions that the barometric firm's price is supposed to reflect is both secret and open price-cutting,[7] it is not always possible to determine whether the barometric firm should be viewed as the "price leader" or as one of the first "price followers." Hence, for purposes of this discussion, the above otherwise satisfactory dichotomy will be augmented by a third type of price leadership which may be viewed either as an extreme form of the barometric type or simply as price leadership in lieu of overt collusion.

"Models" of Price Leadership

Although most of the vast volume of economic literature on price practices and policies conveys the impression that price leadership is a logical and effective means for eliminating price competition among rival sellers, theoretical treatment of the topic has been cast in rather simple static terms and limited to three special cases.[8]

[6] George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," *Jour. Pol. Econ.*, Vol. LV, No. 5 (Oct., 1947) pp. 444-45.

[7] See Professor Stigler's illustrative case, *ibid.*, p. 445.

[8] The number of institutional and other conditions under which the prices set by one firm in an industry might be used by all others is probably very large, but only three sets of conditions seem to make price leadership of some sort inevitable and at the same time identify the price leader.

Perhaps the most familiar theoretical model of price leadership is centered upon the dominant firm or partial monopolist. Starting from the assumption that an industry comprises one large producer and a number of smaller ones, no one of which produces a high enough percentage of total output to influence the price, it logically follows that the rôle of price-making falls to the dominant firm. This is true because each small firm regards its own demand schedule as perfectly elastic at the price set by the dominant firm and thus behaves as though it operates under conditions of perfect competition. The dominant firm might set any price it chooses, but presumably would set one which maximizes its profits by equating its own marginal cost with its marginal revenue as derived from the market demand schedule and the summation of the individual marginal cost curves of the independent small producers.

Professor Boulding[9] has presented two other theoretical models of price leadership. One relates to an industry comprising one low-cost high-capacity firm and one or more high-cost low-capacity firms, the other to an industry comprising at least two firms having identical cost curves but different shares in the market. In the former case, because no price can equate marginal cost with marginal revenue for both (or all) firms, a conflict in price policy inevitably arises. However, since the price preferred by the low-cost high-capacity firm is lower than the price preferred by the high-cost low-capacity firm (or firms), the low-cost firm can impose its price policy on the industry. In the other case, under assumptions described by Professor Boulding as "rather peculiar," that marginal cost curves for all firms are identical and that each firm's relative share in the market is different from that of all other firms and remains unchanged over the entire range of possible prices, marginal cost and marginal revenue are equated at a lower price for the firm having the smallest share in the market than for any other firm. Hence, the firm having the smallest share in the market at all possible prices can impose the price most acceptable to it on the rest of the industry. Professor Boulding makes no claim that the latter model is built upon sufficiently realistic assumptions to throw much light upon price policies generally but suggests that it might explain price behavior in the retail gasoline industry.

It is worthwhile to point out that in none of the above three models is price leadership a result of collusion; in fact, in each of the models price leadership is an inevitable consequence of a particular cost or demand phenomenon which precludes price collusion among sellers as a possible solution. Moreover, in none of the three models is the absence of competition attributable to the presence of a price leader. In

[9] Kenneth E. Boulding, *Economic Analysis*, rev. ed. (New York, 1948). For a diagrammatical presentation of the two models, see pp. 582, 586.

each of the three cases, conditions in either the factor or product market are already assumed to be inconsistent with the assumptions associated with highly competitive industries. Since the empirical evidence presented in a later section also suggests that effective price leadership, for the most part, is a result of monopoly rather than a cause of it, it is important that these two observations be borne in mind when it comes to prescribing appropriate remedies for industries having price leaders.

Dominant Firm Price Leadership

Contrary to the general belief that price leadership, because it eliminates the kink in the oligopoly demand curve, makes for a higher degree of price flexibility, Professor Stigler has presented evidence to show that "Except for the number of price changes of two-firm industries . . . , the prices of industries with price leaders are less flexible than those of industries without price leaders . . . ."[10] Significant though this discovery may be as evidence of the nonexistence of kinked oligopoly demand curves, it should be pointed out that the basic conclusion reached by Professor Stigler applies to a particular type of oligopolistic market and, hence, is not conclusive evidence that price leadership, regardless of type, leads to less flexible prices. For example, Professor Stigler limits the industries characterized by price leadership to those in which a dominant firm (one that produces a minimum of 40 per cent of the total output of an industry and more if the second largest firm is large) is present. Hence, industries characterized by other types of price leadership were included among those having no price leader. Moreover, the average number of firms in industries classified as having a price leader was slightly less than one-half of the average number of firms in industries not so classified. It is not surprising, therefore, that the former group shows a higher degree of price inflexibility than the latter for two reasons.

First, the rationale of price-making by the dominant firm or partial monopolist differs but little from that employed by the pure monopolist. They both, presumably, have complete control over prices, but the partial monopolist, unlike the pure monopolist, must take account of the quantity that the competitive sector of the industry will offer at any price he may set. However inadequate classical theory might be in explaining the rigidity of monopoly prices, given the empirical evidence that monopoly prices are relatively inflexible, it probably follows that prices controlled by partial monopolists assume similar ridigities.

Secondly, the greatest number of firms in any industry classified

[10] Stigler, *op. cit.*, p. 446.

among those having a price leader was four; the average number of firms in such industries was three. On the other hand, one industry not classified among those having a price leader contained as many as twelve firms and another contained eleven; the average number of firms in industries classified as having no price leader was over six. However, since many of the excluded industries such as the rayon, newsprint, copper, gasoline, plate glass, window glass and plow industries possess barometric price leaders and a larger number of firms than those having a partial monopolist, Professor Stigler's findings could also be interpreted as evidence that (1) prices are more flexible under barometric than dominant firm price leadership and (2) price flexibility increases as the number of firms is increased. Professor Stigler isolated and very adequately treated the latter relationship himself;[11] the former will be discussed more fully below.

In the light of the formal theoretical construction employed to explain the rationale of dominant firm price leadership, a fairly strong argument can be made against even including markets where prices are set by a dominant firm among those containing a "price leader." Formal solutions which yield an equilibrium price in such markets preclude all possibilities of the failure of small firms to follow the dominant firms' price change, and, hence, from the viewpoint of the dominant firm, increase the probability of their following to absolute certainty. That is to say, whether the dominant firm attempts to maximize profits in the short-run by equating its own marginal cost and derived marginal revenue schedules or pursues some other price policy, so long as it produces at a rate of output which clears the market at its own price, the remaining firms in the industry have no choice but to equate their marginal costs with the price it sets. Essentially, therefore, the pure dominant firm market presents a problem of monopoly price control rather than one of price leadership.

For purposes of public policy, to draw such a distinction between monopoly pricing and price leadership involves more than a mere question of definition. Price "leadership" in a dominant firm market is not simply a *modus operandi* designed to circumvent price competition among rival sellers but is instead an inevitable consequence of the industry's structure. Hence, the only obviously effective remedy for such monopoly pricing is to destroy the monopoly power from which it springs, *i.e.*, dissolve, if economically and politically feasible, the dominant firm. Public policy should hardly be directed toward this end, however, before the foundations of the dominant firm's existence have been thoroughly examined. Nearly every major industry in the American economy has, in its initial stages of development, been dominated

[11] *Ibid.*, p. 444.

by a single firm—the Slater Mill in cotton textiles, the Firestone Company in rubber tires, Birdseye in frozen foods, the American Viscose Corporation in rayon yarn, etc., to mention only a few. The monopoly power of the initial dominant firm in most industries, however, was gradually reduced by industrial growth and the entrance of new firms. It is not at all certain that public policy measures could have either hastened or improved upon the process. Where forces of competition do not eliminate such power, however, (Professor Stigler has suggested the aluminum and scotch tape industries to me as possible examples), it is highly improbable that a mere declaration of the illegality of price leadership by the courts offers itself as a sufficient or even a possible remedial measure. The dominant firm would simply be confronted with the dilemma of (1) changing prices frequently and reminding the public with each price change that it sets the price for the industry or (2) simply varying its output and risk the attendant onus of price fixing. Hence, should all dominant firms accept the implications of the recent *Tobacco* decision at their face value, there would be no reason to conclude *a priori* whether prices in markets dominated by a particular firm would henceforth be more or less flexible, or would more closely approximate prices which one would expect under more competitive conditions.

Barometric Firm Price Leadership

Unlike price leadership of the dominant firm type, there is no explanatory hypothesis which identifies the barometric price leader. In contrast to the dominant firm, the barometric firm "commands adherence of rivals to his price only because, and to the extent that, his price reflects market conditions with tolerable promptness."[12] Hence, the reasons why a particular firm is the barometric firm must be found in the historical background of an industry and the institutional and other features which have shaped its development.

It is worthwhile to note in passing that in a large number of industries which do not contain a partial monopolist, the price leader is frequently but not always the largest firm. In the newsprint industry, for example, International Paper, the largest producer, has led most price changes in markets east of the Rocky Mountains and Crown Zellerbach, the largest western producer, has usually announced new prices on the west coast. The price leadership of International, however, has sometimes been challenged by Great Northern, another large producer. American Viscose, which at one time completely dominated the rayon industry, has continued to be the accepted list-price leader although it had lost its dominant firm position as early as

[12] *Ibid.*, p. 446.

1930. On the other hand, Phelps Dodge, only the third largest producer of copper in 1947, has been quite active in setting copper prices since OPA controls were removed in November, 1946.

Patently, it is not possible in every case to judge when barometric price leadership is monopolistic and when it is competitive in character without making a thorough investigation, but there are certain visible market features associated with competitive price leadership. For example, unless a particular firm has demonstrated unusual adeptness at adjusting prices to market forces, in the absence of conspiracy one would certainly expect occasional changes in the identity of the price leader. Moreover, unless the lines of price communication are extremely efficient, prices are not likely to be uniform among sellers in a specific market area for a short period immediately following the date the price leader announces a new price. A "wait and see" policy on the part of several sellers not only gives rise to occasional price differentials, but also suggests the absence of even tacit collusion. Furthermore, if new prices are communicated among buyers more rapidly than among sellers, there would be frequent changes in the ratios of sales (and, depending upon inventory policies, of production) of particular firms to the total volume of sales (or production) for the industry as a whole. In the rayon and textile industries, where each large fabricator buys yarn and cloth from several sellers simultaneously, this is usually the case. Buyers iron out price differentials among sellers by refusing to buy at old prices if the price leader has announced a price reduction and buy heavily at old prices if the price leader has announced a price increase.

The price histories of copper and rayon yarn illustrate fairly well most of the outward manifestations one would expect of competitive barometric price leadership. Immediately upon the removal of OPA controls Kennecott Copper took the lead in advancing domestic copper prices from the controlled 14.375 cents per pound to the world price of 17.5 cents per pound.[13] All other producers followed. Eight days later, on November 20, 1946, Phelps Dodge advanced its price to 19.5 cents per pound and was followed by the rest of the industry. On January 28, 1947, American Smelting and Refining Company advanced its domestic price to 20.5 cents; however, other producers continued to sell at the old price until Phelps Dodge increased its price to 21.5 cents on March 3. American Smelting and Refining Company matched the new price but Kennecott Copper announced a firm price policy on March 27 and stated that it would continue to make shipments at the old price. Large copper buyers announced three weeks later, however, that in their opinion "Kennecott had 'reluctantly' advanced their prices

[13] Company prices are from various issues of the *New York Times*.

to meet present levels and the present action to fix prices at present levels meant that Kennecott would be unlikely to follow any further upward price revisions from other sources."[14] In the latter part of June the price of copper settled at 21.5 cents after several weeks of varying prices among sellers. Around the end of July, 1948, several smaller companies increased their prices to 23.5 cents; the larger producers did not follow immediately but withdrew all offerings from the market. On August 3 Phelps Dodge and Anaconda jointly raised their prices to 23.5 cents and Kennecott followed on August 11.

Of the five major copper price changes which occurred between November, 1946, and December, 1948, therefore, Phelps Dodge, a medium-sized producer, initiated three. Competitive factors, however, such as the import tariff on sales made in the United States by foreign producers and price movements of scrap, tin, and aluminum, probably exerted much more influence on copper prices during the twenty-six month period than did the arbitrary judgment of the firm initiating the price changes.[15]

Until 1930 American Viscose was the dominant firm in the rayon yarn industry. Since then the company has produced from only 30 per cent to 35 per cent of the total domestic output of rayon yarn but has first announced over 75 per cent of all list-price revisions. The price leader can exercise only negligible control over rayon prices, however, since they are largely determined by the prices of such close substitutes as silk, cotton, wool, nylon, orlon, and vinyon, each of which competes strongly with rayon in a number of market areas. Moreover, small rayon producers do not hesitate to sell at less than their quoted price when inventories commence to accumulate, a practice which has prompted most of the downward revisions announced by American Viscose. On the other hand, rayon list prices are seldom increased unless the industry is operating close to full capacity and inventories are still declining. For list-price movements, however, American Viscose plays the rôle of the barometric firm.

Barometric price leadership which follows the above lines probably does not greatly circumvent the public interest nor is it likely that the *Tobacco* decision has brought this type of price leadership within the reach of the antitrust laws. The barometric firm possesses no power to coerce the rest of the industry into accepting its price and, in most such industries, it simply passes along information to the "Big Three"

[14] *New York Times,* March 29, 1947, p. 23.

[15] Copper producers seem to feel that their prices are largely dependent upon the prices of such competing metals as aluminum and tin. Between March, 1947, and August, 1948, Kennecott publicly denounced further price increases since it believed they would induce fabricators to substitute tin and aluminum for copper. *Cf. New York Times,* May 5, 1948, p. 41, and August 3, 1948, p. 29.

or the "Big Four" on what the rest of the industry is doing in a declining market, and proceeds with initiating price increases in a market revival only so rapidly as supply and demand conditions dictate.

For purposes of prescribing appropriate remedial action it is important also to differentiate between actual collusive price leadership and "apparent" collusive price leadership which stems more from overt selling arrangements than from simply following price changes announced by a rival firm. In the steel, cement, glass container, and fertilizer industries, what has appeared at times to be barometric price leadership was in fact a natural consequence of basing point and zone pricing systems. Under a single basing point system, if recognized and adhered to by all producers, giving the appearance of following a price leader is inevitable since the pricing policies of all sellers are unalterably geared to the base mill. The same is true of a multiple basing point system if all base mills are owned by a single seller. Identical prices among producers in an industry operating under a multiple basing point system where the base mills are owned by different producers is not clearly a necessary consequence of the basing point system but one should, on economic grounds, expect all prices at least to move in the same direction. A decrease in the base price in one area allows all producers abiding by this base price to further invade adjacent areas until mills in adjacent areas meet the price reduction; an increase in the base price in one area increases the demand for the commodity from mills in adjacent areas, thereby encouraging corresponding price increases. Hence, a sufficient explanation for similar price movements among producers abiding by a basing point system is the presence of the basing point system itself. The best evidence that this is so is the undisciplined pricing which occurs when the basing point system temporarily breaks down.[16]

For the most part, therefore, the barometric price leader, as defined by Professor Stigler and as visualized for purposes of this paper, appears to do little more than set prices that would eventually be set by forces of competition. In such industries as the copper and rayon industries, *i.e.*, oligopolies within monopolistically competitive markets, these prices are largely dependent upon the prices of closely competing products. In more clearly delineated oligopolistic industries, particularly where the number of firms is fairly large, price leadership of the barometric type has seldom if ever been a sufficiently strong instrument alone to insure price discipline among rivals. Price leadership in the steel and fertilizer industries has been a subordinate feature of a basing point system. The glass container industry implemented price leadership by inaugurating a zone pricing and market sharing system.

[16] *Cf.* Temporary National Economic Committee, Monograph No. 42, p. 3.

In spite of this, many firms were not faithful price followers.[17] In the tin can industry, where American Can Company has frequently been identified as the price leader, a recent study suggests that American's list price (computed principally from the price of tin plate) has only established the base line of competition for other can producers.[18] Moreover, American Can's influence over the price of tin cans is as much attributable to its quasi-monopsonistic position in the tin plate market as it is to the company's share of the tin can market.

From the standpoint of public policy the real problem in such markets as those discussed above, therefore, centers upon economic forces which support price leadership rather than upon price leadership *per se*. In industries dominated by a strong partial monopolist, parallel pricing among firms stems from the monopoly power possessed by the partial monopolist and not from the tacit adoption of a price leader to circumvent price competition. The competitive sector of the industry often has no choice but to accept the partial monopolist's price. In oligopolies which form segments of larger monopolistically competitive industries, such as those which conform to the pattern of the rayon and copper industries, the barometric firm "leads" price changes only in the limited sense that its price movements are presumed by its rivals to have resulted from a synthesis of all the available market information. Price decreases initiated by firms selling closely competing products and by smaller firms within its own segment of the industry usually prompt downward list-price revisions by the barometric firm. List-price increases occur only after the market forces have been reversed. In most markets of an intermediate character the evidence indicates that price leadership has been decidedly a subordinate feature of a pricing policy built upon the much stronger foundations of trade association activity, zone pricing, basing point agreements, etc.[19]

A comprehensive study embracing the tacit and overt pricing arrangements among sellers in a wide variety of industries more or less oligopolistic in character would undoubtedly point up to more meaningful conclusions than those suggested by the above evidence. Nevertheless, there is some basis for believing that the mere adoption of a price leader is not nearly such an effective means for eliminating price competition among the few as many economists are prone to believe.

[17] *Cf.* Robert L. Bishop, "The Glass Container Industry," in *The Structure of American Industry*, edited by Walter Adams (New York, 1950), pp. 407-8.

[18] Charles H. Hession, *The Tin Can Industry* (privately published), p. 362.

[19] An examination of recent industry studies [including those reproduced in part in *The Structure of American Industry*, *op. cit.*, and in Walter Adams and Leland E. Traywick, *Readings in Economics* (New York, 1948)] reveals little evidence that price leadership, when not buttressed by stronger means of preserving price discipline, prevented price competition among oligopolists in times of market crisis.

Except for the type of price leadership discussed below, the evidence suggests that the power of the price leader to preserve price discipline derives less from his ostensible status as the barometric firm than from the more overt arrangements which support it. Where such supporting arrangements are not found, the barometric firm seems to do little more than respond to forces of competition. If this is so, the *Tobacco* decision may have far less importance than has been attributed to it, but at the same time the search for remedial action in similar future cases may not be nearly so fruitless as is generally believed. The elimination of supports to effective price leadership, most of which are not particularly elusive targets, might very well eliminate the effectiveness of price leadership itself.

Price Leadership in Lieu of an Overt Agreement

In industries which possess certain specific features, however, one would expect *a priori* a type of price leadership of a much different nature and considerably more inimical to the public interest than that of the barometric type discussed above. In such industries price leadership may conceivably be so effective as to serve all the ends of a strong trade association or of a closely knit domestic cartel and, hence, in a political environment where overt collusion is illegal, may be the only feasible means of assuring parallel action among sellers. In view of the foregoing discussion, the most important market features prerequisite to effective price leadership of this type would seem to be as follows:

1. Firms must be few in number and each firm must be sufficiently large to be compelled to reckon with the indirect as well as the direct effects of its own price policy. If there are several very small firms in the industry but no dominant firm, they, through ignoring their indirect influence on price, are likely to engage in promiscuous price cutting whenever market crises occur and, hence, at least for downward price adjustments, usurp the rôle of price leader. Moreover, such firms are not likely to follow the lead in upward price revisions unless they are completely satisfied with their expected volume of sales at the new price.

2. Entry to the industry must be severely restricted in the price set by the price leader is to remain close to a rationalized oligopolistic price for any significant length of time. If the long-run cost curve for the new entrant is substantially the same as those which confront entrenched firms, price rationalization can be only temporary since the rationalized price will attract new entrants which, in turn, will bid the price down.[20] If, however, the time lag between investment decisions and actual investment in the industry is significant, price

[20] For an imperfect example, see discussion of cigarette industry, *infra*.

rationalization for the duration of the lag may suggest itself as a profitable possibility.

3. The "commodity" produced by the several firms need not be perfectly homogeneous but each producer must view the output of all other firms as extremely close substitutes for his own. If this condition is not fulfilled, each producer is likely to view his product as distinctive in character and the "market" will not be characterized by a single price policy but by several. Examples of such individual pricing policies may be found in the automobile and brand-name men's clothing markets. Where the output of each firm is differentiated to the extent that it is only a moderately good substitute for the output of other firms, price leadership, of course, is meaningless.

4. The elasticity of the market demand schedule for the output of the industry as described in (3) above must not greatly exceed unity. If demand for the output of the industry is elastic because the oligopoly is only a segment of a larger monopolistically competitive market, the prices of closely competing products severely limit or possibly even eliminate the gains to be derived from adopting a price leader. Moreover, if demand for the output of the oligopoly is highly elastic, firms are not likely to adhere to the price leader's price if to do so would result in substantially less than capacity operations, since each firm could still stimulate its own sales considerably by lowering its price, even though all other firms met the new price. The price history of the domestic rayon industry and the postwar price history of the copper industry furnish particularly good evidence of the validity of this point. Whenever declining silk and cotton prices have commenced to reduce the volume of rayon sales at existing list prices, rayon producers, if the price leader had not already reduced his price, have sold at less than list price in order to move accumulating inventories and to maintain operations at near-capacity output. Similarly, copper producers appear to follow the price leader only if they believe his new price is in line with prevailing scrap, aluminum, and tin prices.

5. Individual-firm cost curves must be sufficiently similar so that some particular price allows all firms to operate at a satisfactory rate of output. If, for example, the industry is composed of several high-cost low-capacity firms and several low-cost high-capacity firms, the resulting conflict in price and output policies cannot be resolved by adopting a price leader so long as all firms remain in the industry.[21] Low-cost firms will not accept the price leadership of high-cost firms since there is a better option in the form of a lower price and a higher rate of output open to them. They can therefore force the high-cost

[21] For the theoretical analysis relevant to an industry containing several firms but only one low-cost high-capacity firm, see Boulding, *supra*, fn. 9.

sector of the industry to adopt the lower price but, if the differences in costs between high-cost and low-cost firms are significant, high-cost firms will not recover full costs and will gradually be eliminated from the industry. Hence, the conflict will have been resolved and the condition that all producers be confronted with reasonably similar cost curves will then be fulfilled.

It might be argued that the foregoing conditions are fully as necessary for any form of effective parallel action, such as price maintenance agreements, strong trade associations, or even unimplemented oligopolistic rationalization, as they are for effective price leadership. Such an argument, of course, would be entirely valid for, it will be recalled, the type of price leadership being examined is but one of a number of possible forms of conscious parallelism, all of which presumably stem from a common source, namely, the identity between the long-run interests of each individual firm and those of the industry as a whole.

Moreover, conditions other than those discussed above bear significantly upon the likelihood of effective price leadership ever arising and maintaining price discipline in an industry. Among those that first come to mind are the extent of tariff protection, the rate of technological change, the stability of demand, and the aggressiveness of management. An examination of the available price histories of industries in which the number of sellers is not large indicates, however, that price leadership is most likely to serve the ends of a collusive agreement when the above five conditions are fulfilled. Or, stated another way, effective price discipline seems to have been rarely achieved by the tacit means of price leadership alone when one or several of these conditions did not exist.

The Tobacco Decision Reappraised

Had the Department of Justice diligently searched the American economy for an industry which most nearly contained all the conditions prerequisite to effective price leadership, it could hardly have found a better example than the cigarette industry. The entrenched position of the "Big Three" brand-names had made entry to the cigarette industry exceedingly difficult. Moreover, parallel action in the leaf tobacco market had insured fairly comparable if not equal cost conditions among the three large cigarette producers; and, although each of them viewed the output of the other two as such perfect substitutes for his own that none would risk a retail price differential, demand for their output collectively, at least in the short run, was inelastic. Furthermore, in 1929 the Big Three controlled over 90 per cent of the domestic cigarette market and, with Lorillard, they controlled 98 per cent. Hence, for all practical purposes, the number of cigarette producers was very small.

Also, the large cigarette producers had had ample opportunity as well as compelling reasons for working out a *modus operandi* which would identify their individual interests with those of the Big Three collectively. In substance, counsel for Liggett and Myers probably described the attitude of all the large producers of cigarettes when he stated, ". . . in making price decisions the management of Liggett and Myers has acted in response to a long experience of non-identical prices as well as identical prices."[22]

In spite of such ideal conditions for securing parallel action by adopting a price leader, however, the Big Three soon discovered that even their market was subject to economic forces that put an upper limit on exploitation. The *long-run* demand for their collective output was elastic, hence complete exploitation of the cigarette market was limited to a short-time period. With low tobacco prices and high cigarette prices in the latter half of 1931 and 1932, competitive forces began to assert their influence. Whereas the 10-cent brands had been virtually unknown (accounting for only 1.5 per cent of all cigarettes sold) in the first half of 1931, output of small independents began to increase rapidly after the price increase led by Reynolds in June, 1931. By December, 1932, they accounted for 22 per cent of total cigarette sales. In the meantime, the sales of Reynolds, American, Liggett and Myers and Lorillard had been drastically reduced. By February, 1933, their vulnerability to competition had become sufficiently evident to the Big Three to induce reductions in popular brand cigarette prices to the lowest level since 1918. Hence, simple price leadership, even under such ideal conditions as those afforded by the cigarette industry, had failed to preserve the rationalized oligopoly (or monopoly) market solution.

In the light of their alleged strategy after 1933, perhaps no one was more aware than the Big Three themselves of the long-run ineffectiveness of price leadership when not implemented by other safeguards from competition. Although price leadership continued to play an important rôle in cigarette pricing, its effectiveness after 1933 was largely dependent upon the successful effort of the Big Three to manipulate the leaf tobacco market.

If unimplemented price leadership proved to be an exploitative weapon of limited effectiveness in the cigarette industry, and its usefulness confined to a time period scarcely exceeding several years, it is highly improbable that tacit parallel pricing in oligopolistic markets offers itself *per se* as either a fruitful or fertile field for antitrust in-

[22] *American Tobacco Company* v. *United States*, 147 Fed. 2nd 93 (1945), Liggett and Myers' Brief, p. 264; *ibid.*, Reynolds' Brief, p. 390; and American Tobacco's Brief, pp. 94-95.

vestigation. Hence the *Tobacco* decision, particularly when viewed against a background in which appropriate remedial action is conspicuously absent, is not likely to have far-reaching consequences. The appropriate question before economists, the business community, and the courts alike, therefore, is not how far tacit parallel pricing in oligopolistic markets can proceed before it becomes illegal, but rather what implementing devices and market conditions make price leadership both possible and effective. In most oligopolistic industries where the record of pricing techniques is fairly complete, there are good reasons for suspecting that price leadership is essentially a shadow of more insidious pricing devices and trade restraints. When the devices which buttress price leadership have been destroyed, price leadership as an exploitative practice may well have ben emasculated.

In view of the extraordinary conditions prerequisite to the more effective type of price leadership, it is not likely that the *Tobacco* decision, as a legal precedent, can or will either measurably influence the behavior of prices in markets where sellers are few in number nor will it greatly broaden the scope of the antitrust laws. Along these lines, the recent basing point and similar future decisions would appear to be a much more profitable line of approach to monopoly problems posed by industries comprising relatively few sellers.

DEPRECIATION POLICIES AND INVESTMENT DECISIONS

By S. P. DOBROVOLSKY*

I

The relation between business depreciation and investment policies has attracted considerable attention. During the long depression of the 'thirties, the opinion was repeatedly expressed that private investment could be stimulated by adopting accelerated depreciation methods. During the war years, a special problem arose in connection with the depreciation of emergency facilities, and special increased rates were authorized for this type of investment. In the postwar period some writers have continued advocating the use of accelerated depreciation, along with other measures designed to encourage private investment. Recently, accelerated rates have again been authorized for companies investing in defense facilities. This paper attempts to examine some basic relationships between the depreciation method and the net income derived from investment in durable equipment, under different business conditions and different income tax provisions.

Let us restate briefly the general principles of valuation of durable equipment. In general, any piece of equipment is valued in accordance with its expected net contribution to the firm's revenues. The equipment will yield a net profit if the discounted value of the revenue stream, attributable to its use, exceeds the discounted cost of its acquisition and maintenance. Mathematically, this may be stated as follows:

$$P = [r_1v + r_2v^2 + \ldots\ldots + r_nv^n] + Sv^n - C$$

where

P = net profit derived from the equipment

$r_{1 \ldots n}$ = annual revenues attributable to the equipment, net of all operating expenses, but gross of depreciation allowances, over the expected lifetime (n years)

$v = \dfrac{1}{1+i}$ = the discount factor, where i is the rate of interest at which the future revenues and costs are discounted

C = the original cost of the equipment (assuming full cash payment at the beginning of the first year)

S = salvage value of the equipment at the end of the n's year.

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The initial decision—whether or not to purchase new equipment—depends on whether the present worth of all the r's plus the present worth of S exceeds or falls short of C. Once the equipment has been purchased, however, C becomes a quantity of "historical" interest only.

The usual accounting procedure consists of a gradual writing-off of C, but the depreciation method cannot, of course, affect the amount of the initial investment outlay; nor does it have any direct effect on the firm's operating revenues. When a higher write-off is made in a given year, this will increase total cost and reduce net income reported for that year, but will not in itself constitute a change in the flow of funds in and out of the enterprise. A change in the depreciation allowances can affect the flow of funds only indirectly—by changing the amount of the taxable income and the tax paid. A greater allowance for tax purposes will result in a smaller taxable income and hence a smaller tax payment, which will leave the firm with a greater, and not smaller, amount of funds. It will, therefore, be appropriate for our purposes, to consider annual revenues (or deficits) net of taxes (or tax refunds), but gross of depreciation charges.

When new equipment is installed, the possibility of using the accelerated depreciation method[1] means that taxes may be reduced, in the early part of the equipment's lifetime, but higher taxes will have to be paid in the remaining period. In comparing the revenue streams resulting from the use of straight line and accelerated depreciation respectively, let it be assumed that r's represent the firm's annual revenues after taxes when the straight line method is used, and that t's represent the annual differences in taxes which would result if the acceleration method were employed. We may then write the following two expressions:[2]

Straight line: $$R_1 = \sum_{1}^{n} rv \qquad (1)$$

Accelerated: $$R_2 = \sum_{1}^{k} (r + t)v + \sum_{k+1}^{n} (r - t)v. \qquad (2)$$

It is clear that the algebraic sum of all t's over the entire lifetime

[1] Accelerated depreciation may be defined, broadly, as an arrangement whereby the annual amount written off in the earlier years of the equipment's lifetime are greater than the amounts written off in the later years. The straight-line method, on the other hand, makes the annual write-off constant throughout the equipment's lifetime.

It should be noted that in comparing the effects of these two methods we shall be concerned not with the immediate consequences of a shift from one procedure to the other, but with the long-run differences resulting from a continuous use of one of them or the other.

[2] The initial cost of the new equipment (C) and the salvage value of the old equipment (S) do not depend on the depreciation method used by the firm and may, therefore, be omitted in considering the effect of accelerated depreciation.

of the equipment must be zero; whatever the tax reduction in the early period may be, it will be fully offset by the increase in taxes paid in the subsequent years. In other words, the sum of all undiscounted revenues over the entire lifetime remains the same irrespective of the depreciation method used. But since the distribution of the tax payments over time is different, the present worth of the two series (R_1 and R_2) is not the same, and the difference between them depends on how strong the discount factor v is. With the prevailing low level of the interest rates, this factor is not likely to assume a considerable importance except in the case of most durable types of business assets, such as buildings, heavy railroad equipment, etc.

It may be argued that differences in the depreciation method should be of much greater importance under conditions of uncertainty with respect to future revenues. For instance, if uncertain business conditions prevented the firm from making plans extending beyond year k (in equation 2), it would seem that the possibility of using accelerated depreciation for tax purposes should definitely have a stimulating effect on new investment projects. Such would indeed be the case if the tax laws contained no provisions pertaining to the carry-over of business losses. When loss carry-overs are permitted, however, the situation is essentially different.

Accelerated write-offs in the earlier years mean correspondingly smaller annual charges in the following period. If losses are incurred in the latter period, smaller depreciation charges will mean smaller net deficits reported for tax purposes and—if loss carry-overs are allowed—smaller tax refunds. Assuming that loss carry-overs are allowed over the entire lifetime of the equipment, the total net tax (total tax paid less total refunds received) must be the same irrespective of the depreciation method used.

Suppose that the firm is making profit in the years 1 to k and that deficits are incurred in the years k + 1 to n. Let r's represent annual revenues after taxes and d's annual deficits after tax refunds, on the basis of straight-line depreciation.[3] Further, let t's be the annual differences in taxes and f's the annual differences in tax refunds, which would result if the accelerated method were used. We may then write the following expressions:

Straight-line depreciation:
$$R_3 = \sum_{1}^{k} rv - \sum_{k+1}^{n} dv \tag{3}$$

[3] Each annual revenue is net of taxes as originally paid; each annual deficit is reduced by the amount of refund claimed and received within the year. For simplicity's sake, it is assumed that tax refunds, computed on the basis of a given year's deficit, are paid in cash within the same year. If the refunds were not payable in cash, but could be applied against future taxes, the argument would remain essentially the same, except that the additional time element would have to be taken into account.

$$\textit{Accelerated depreciation:}\quad R_4 = \sum_{1}^{k} (r + t)v - \sum_{k+1}^{n} (d + f)v. \tag{4}$$

The algebraic sum of t's and f's in equation 4, over the entire lifetime of the equipment (n years) must be zero. In other words, the increases in revenues in the years 1 to k (because of lower taxes) are exactly offset by the increases in deficits in the years $k + 1$ to n (because of lower tax refunds). The present values R_3 and R_4 may differ from one another because of the discount factor, but as stated above, the effect of this factor is likely to be relatively small in most cases.

The present tax law does not allow unlimited carry-overs. Under the present regulations, net operating losses may be carried back one year or carried forward over a period of five years, thus averaging the losses over a seven-year period. It would seem that in most cases this period should be sufficient to substantially reduce, if not eliminate, the difference in revenue, resulting from the use of a different depreciation method. In some cases, however, this may not be so. Particularly, the one-year carry back allowed by the law may prove entirely inadequate when business has to be discontinued, leaving a large portion of the original investment outlay unrecovered.

Up to now we have been concerned with a single investment outlay: the purchase and use of an individual piece of equipment. Let us now consider the case of a going concern where investment outlays are made continually. We must distinguish here between the stationary, expanding and contracting firms. A stationary firm, *i.e.*, the firm with a stable amount and a stable age distribution of productive equipment may find that the use of the accelerated and the straight-line methods of depreciation yields identical results. The accelerated method will involve greater write-offs for the relatively new items of equipment, but correspondingly smaller write-offs for the relatively old items. As a result, total depreciation and total taxes each year may be exactly the same as they would be if the firm were using the straight-line method.

An expanding firm, on the other hand, may derive a substantial temporary advantage by using the accelerated depreciation method. Heavy new investment will involve heavy initial depreciation write-offs, which will reduce the taxable income and the tax. To take an extreme example, if new equipment could be written off completely in the first year and if the entire net income before depreciation were continually reinvested in depreciable assets, the firm would have no taxable income and would pay no tax as long as such an expansion program were continued. The tax would not be lost to the government once and for all, but collection would be postponed indefinitely.

Contrariwise, a firm with a declining rate of investment would be

at a disadvantage if it were using the accelerated depreciation method. Most of its depreciable equipment would be relatively old, with only a small fraction of the original cost still being unrecovered. Consequently, current depreciation charges would be relatively small and the taxable income correspondingly higher.

It seems, therefore, that the accelerated method might become a factor accentuating cyclical fluctuations of business, if it were generally adopted by industrial firms. In periods of prosperity, when most firms are expanding, tax considerations would provide an additional incentive for a heavy new investment; in periods of depression, when most firms are contracting, the plight of private business would be further aggravated by an increase in the tax burden.

II

Business firms are often confronted with a situation in which new and improved types of machinery become available before the old equipment has reached the end of its useful lifetime. In order to decide on the best time for replacement, the firm then has to compare the revenues that could still be derived from the old equipment with the revenues and costs that would result from an immediate installation of the new equipment.

When replacement is made prior to the expiration of the machine's expected lifetime, the amount of depreciation already charged will be different if a different depreciation method has been used.

Whether this difference will have an effect on the firm's taxable income depends on the provisions with respect to the writing off of machinery's unrecovered cost. Let us suppose, at first, that income tax is imposed on a strictly annual basis and no unrecovered cost write-offs are allowed. If equipment is scrapped and replaced before it is fully depreciated, its unrecovered cost may not be charged against income in the current, prior, or subsequent years.

In comparing the two revenue streams obtained by the use of the straightline and the accelerated procedures respectively, we shall assume, as before, that r's are the firm's revenues after taxes on the basis of the straight-line method and t's are the annual difference in taxes which would result if accelerated depreciation were used. We may then write the following expressions, in which all quantities with the *prime* sign relate the new equipment and all quantities without this sign relate to the old equipment:

Postponed Replacement

Straight-line depreciation: $$R_5 = \sum_{1}^{k} rv + \sum_{k+1}^{k+n} r'v \qquad (5)$$

Accelerated depreciation:

$$R_6 = \sum_{1}^{k} (r - t)v + \sum_{k+1}^{m} (r' + t')v + \sum_{m+1}^{k+n} (r' - t'). \tag{6}$$

Immediate Replacement

Straight-line depreciation: $R_7 = \sum_{1}^{n} r'v$ (7)

Accelerated depreciation:

$$R_8 = \sum_{1}^{i} (r' + t')v + \sum_{i+1}^{n} (r' - t')v. \tag{8}$$

In these expressions, the years 1 to k represent, as before, the remaining part of the old equipment's lifetime, while the new equipment is expected to be in service for n years. In the years k + 1 to m (or 1 to i) depreciation accruals for the new equipment are heavier under the accelerated than under the straight-line method—hence the revenues are increased by the amount of tax saved (t′). In the years m + 1 to k + n (or i + 1 to n) depreciation accruals are correspondingly lower under the accelerated method—hence the revenues are reduced by the amount of additional tax (t′).

Since the sum of undiscounted t's over the entire lifetime of the new equipment is zero, the two expressions representing the case of immediate replacement (R_7 and R_8) can differ from each other only because of the effect of the discount factor v. In other words, a difference may arise only because of a changed distribution of the revenue values over time. In contrast, there is a difference between the undiscounted values in the two expressions representing the case of postponed replacement (R_5 and R_6): if the firm is using accelerated depreciation, the sum of revenues obtainable from the old equipment is reduced by the sum of t's over the period 1 to k, while the sum of revenues obtainable from the new equipment is the same irrespective of the depreciation method used. A further difference between R_5 and R_6 will, of course, be produced by the discount factor because of the change in the distribution of revenues over time.

Suppose that a firm, with a given stream of expected revenues before depreciation and taxes, is using straight-line depreciation and finds postponed replacement preferable to immediate replacement (R_5 exceeds R_7). Under the conditions assumed it is possible, however, that if the same firm were using accelerated depreciation, the reverse would be true and immediate replacement would be decided upon (R_8 being greater than R_6 because of the tax difference in the period 1 to k).

Thus, in the absence of unrecovered cost allowances, the use of accelerated depreciation might be expected to increase the value of the immediate replacement plan relative to that of the postponed replacement plan and, consequently, speed up the installation of new machines.

The situation will be found essentially different, however, if it is assumed that the tax law allows full recovery of the undepreciated cost of abandoned equipment. The unrecovered cost of the old equipment at the time of replacement is bound to be smaller when accelerated depreciation is used, which means, under our new assumption, a smaller charge against income and, consequently, a greater tax liability in the year when replacement is made. Thus, when full write-offs are allowed, the sum of the expected undiscounted revenues after taxes must be smaller for a firm using the accelerated method than for a firm using the straight-line method, whether the postponed or the immediate replacement plan is adopted.[4] And it can easily be seen that the difference must be exactly the same under one plan as under the other. If the unrecovered cost of the old machine, resulting from the use of the straight-line method, exceeds the unrecovered cost of this machine, computed by the accelerated method, by a given amount C, then the taxes payable over the remaining part of the machine's lifetime will be lower by Ci (i being the tax rate) in the straight-line case. Now, if replacement is made immediately, the unrecovered cost allowance in the case of straight-line depreciation will exceed the allowance in the case of straight-line depreciation by exactly the same amount C, which means that the taxes will again be lower by Ci under the straight-line method.

To take care of the difference in the unrecovered cost allowance, Expression 8 may be rewritten as follows:

Accelerated depreciation:

$$R_9 = \sum_{1}^{i} (r' + t')v + \sum_{i+1}^{n} (r' - t')v - Tv. \tag{9}$$

In this expression T represents the difference in tax, resulting from higher unrecovered cost write-offs in the case of straight-line depreciation. Since T must be equal to the sum of t's in the period 1 to k in Expression 6, the use of the accelerated method should not, under the

[4] This does not mean, of course, that the firm is better off in the long run when the straight-line method is used. It must be remembered that we are considering a situation in which the firm has already used the old machine for some time, and that there must have been a difference between revenues also in the preceding period. If the straight-line method has been used from the beginning, smaller revenues after taxes must have beer realized in the early part of the machine's lifetime.

tax provisions now assumed, affect the timing of replacement, except for the possible influence of the discount factor.

If the entrepreneur's economic horizon falls short of the entire lifetime of the new machine, his expected revenues are reduced, but he knows, under our present assumptions, that he may rely on a tax adjustment resulting from charging the unrecovered cost against taxable income. The advantage of accelerated depreciation, derived from the heavier allowances in the earlier years, disappears under such conditions. For it is clear that the unrecovered cost under the accelerated method will be smaller by exactly as much as has been added to depreciation allowances in the early part of the machine's lifetime. In other words, the amount of taxes saved in the initial period will be fully offset by the differences in the final tax adjustment. Thus, when a complete unrecovered cost write-off is allowed, the use of the accelerated method should not affect the rate at which replacements are made, except, again for the possible effect of the discount factor.

The effect of the discount factor will, of course, be the stronger the greater the time period considered and the higher the interest rate applied. If the entrepreneur's economic horizon is relatively short, this factor can hardly be expected to be significant, but it may become more important at a time when the entrepreneur is able to make plans for fairly long periods ahead.[5]

In some cases, other considerations may, of course, arise in connection with depreciation differences and produce an appreciable effect on business investment policies. Thus, there may be changes in the firm's liquidity position as a result of the redistribution of tax payments over the equipment's lifetime. If it is considered desirable to strengthen business cash resources—as may be the case when a rapid expansion program is under way—accelerated depreciation write-offs and the

[5] The rôle of the discount factor in affecting investment incentives has been emphasized by E. C. Brown in his essay on "Business Income Taxation and Investment Incentives," in *Income, Employment and Public Policy* (New York, 1948).

In the section dealing with replacement investment, Dr. Brown points out that replacement of assets with considerable undepreciated cost may result in a tax gain, owing to the fact that the unrecovered cost may be written off completely in the year of replacement, while only a graduate writing-off is possible if replacement is postponed till the end of the asset's useful life. This factor will strengthen the incentive to replace assets with undepreciated cost. And it would seem that since the use of straight-line depreciation leaves the firm with higher undepreciated values toward the end of the period, a stronger effect may be expected in this case than in the case of a firm using the accelerated depreciation method.

However, as Dr. Brown's own computations show, this factor remains rather weak, as long as periods of moderate duration are considered. For example, if a machine's life is 10 years and it has already been 60 per cent depreciated, the change in the present worth of depreciation deductions, resulting from telescoping depreciation into the year of replacement, amounts to only 2.2 per cent of the machine's initial cost (the discount rate being 4 per cent per annum).

resulting temporary tax relief may be found a useful measure. Another element to be considered is the burden of additional accounting and administrative work required for obtaining a final tax adjustment when losses are incurred. The use of accelerated depreciation has the advantage of reducing the amount of tax paid in the early years and thus diminishing the relative importance of the final tax adjustment when such is needed. Yet, in general, it seems fairly clear that the significance of depreciation differences can be reduced very substantially by liberalizing the income tax provisions with respect to the deductibility of the unrecovered cost of depreciable equipment and the carry-over of operating losses.[6] Under the present regulations, the unrecovered cost of abandoned equipment may be charged against the firm's taxable income and operating losses may be carried back for one year or forward for five years. These provisions appear to be fairly liberal, except for the closely limited carry-back allowance. But they cannot, of course, be expected to meet the requirements of each and every firm.

[6] The accelerated depreciation device could doubtless be made a far more effective means of speeding up replacements, if the tax law prescribes definite (rather short) periods, within which business equipment were to be fully depreciated, and required that the equipment be actually scrapped at the end of the period prescribed. Such a measure would, however, be essentially different from the usual conception of accelerated depreciation.

THE ALUMINUM CASE: LEGAL VICTORY—ECONOMIC DEFEAT

By Walter Adams*

In recent years, the Department of Justice has attempted to revitalize the long dormant Section 2 of the Sherman Act by placing an increased emphasis on dissolution, divorcement, and divestiture cases.[1] The theory behind many of these cases is that the problem of concentrated economic power in certain industries can—within the framework of the antitrust laws—be dealt with in only one way; namely through dissolution, *i.e.*, trust busting in the literal sense.[2] This approach to the monopoly problem has—quite inevitably perhaps—elicited the charge by some businessmen that the Justice Department is trying to make "a sin of efficiency, a crime of success, a felony of size, and a corpse of private enterprise."

It is our contention that—whatever the *real* motives behind the postwar antitrust program, and whatever the validity of the criticisms leveled against it—the government has made little progress along the dissolution, divorcement, and divestiture front.[3] In sharp contrast to the

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[1] As used in the subsequent discussion, "divestiture refers to situations where the defendants are required to divest themselves of property, securities or other assets. Divorcement is . . . used to indicate the effect of a decree where certain types of divestiture are ordered. It is especially applicable to cases where the purpose of the proceeding is to secure relief against anti-trust abuses flowing from [vertically] integrated ownership and control. The term 'dissolution' is generally used to refer to any situation where the dissolving of an allegedly illegal combination or association is involved, including the use of divestiture and divorcement as methods of achieving that end. While the foregoing definitions differentiate three aspects of remedies, the terms are frequently used interchangeably without any technical distinctions in meaning." Oppenheim, *Cases on Federal Anti-Trust Laws* 885 (1948).

[2] Testifying before the Senate Subcommittee on Appropriations in 1946, Attorney General Clark stated the need for restoring competition "by the seldom used processes of dissolution, divorcement, and divestiture." Similarly, in his Annual Report of June 30, 1947, Mr. Clark said: "In regard to monopolies, I have encouraged the application of the remedies of divestiture and divorcement in civil suits brought under Section 2 of the Sherman Act, as the most expeditious means of eradicating this economic evil. The ramifications of monopoly are myriad and, when allowed to develop unchecked, have an effect upon every aspect of the economic scene. Nowhere is this effect more apparent than in the fields of production and pricing and upon no one is the impact of monopolistic practices more severe than upon the small businessman."

[3] The motion picture cases—*United States v. Paramount Pictures, Inc.* (334 U.S. 131)—constitute the notable exception to this statement, for they represent what is probably

many legal triumphs, the government has generally failed to obtain meaningful economic relief.[4] Remedial action approved by the courts has, in most instances, failed to lessen concentration and restore effective competition. As an examination of the record indicates, firms found guilty of possessing *and* exercising monopoly power have—with the notable exception of the motion picture companies—escaped dissolution, divorcement, and divestiture.

The recently concluded case against the Aluminum Company of America is a fitting illustration of our contention.[5] Here is a prize example to show how ready the courts are to denounce iniquity while steadfastly refusing to correct it. Here is a case in which the government, after a battle of thirteen years, won a resounding legal victory only to suffer a crushing economic defeat.

The proceedings were initiated on April 23, 1937 with a complaint against Alcoa, 25 of its subsidiary and affiliated companies, and 37 of its directors, officers, and stockholders. The complaint charged Alcoa with monopolizing the manufacture of virgin aluminum and the sale of aluminum sheets, alloys, cables, bars, etc., in the United States. It alleged that this monopoly was preserved and protected by the purchase of plants abroad and by cartel agreements with foreign producers. It

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the government's greatest economic victory in the 60-year history of antitrust enforcement. In this instance, the Department of Justice battled through three court decisions, a war, and two intervening consent decrees in order finally to achieve the complete divorcement of the major motion picture producers from their affiliated exhibition outlets. Moreover, the government obtained—in addition to vertical divorcement—a considerable measure of horizontal dissolution on the exhibition level.

[4] In discussing the choice of a remedy in civil antitrust cases, Justice Jackson stressed the importance of granting such economic relief as will effectively prevent future violations and be adequate in restoring competition in the industry concerned. Said Mr. Jackson: "The District Court is not obliged to assume, contrary to common experience, that a violator of the antitrust laws will relinquish the fruits of his violation more completely than the court requires him to do. . . . When the purpose to restrain trade appears from a clear violation of law, it is not necessary that all of the untraveled roads to that end be left open and that only the worn one be closed. The usual ways to the prohibited goal may be blocked against the proven transgressor. . . . In an equity suit, the end to be served is not punishment of past transgression, nor is it merely to end specific illegal practices. A public interest served by such civil suits is that they effectively pry open to competition a market that has been closed by defendants' illegal restraints. If this decree accomplishes less than that, the Government has won a lawsuit and lost a cause." *International Salt Co. v. United States*, 332 U.S. 392 (1947).

[5] *United States v. Aluminum Company of America, et al.* (Eq. 85-73). Final judgment in this case was entered on January 16, 1951, by Chief Judge Knox in New York City. The judgment directed the principal stockholders of Aluminum Company Ltd. of Canada (who are also the principal stockholders of the Aluminum Company of America) to sell 1,292,175 shares of stock in the Canadian company and, in addition, to transfer the voting rights of 524,195 shares to trustees, who altogether will have voting rights as to 51 per cent of the stock issued and outstanding. The avowed purpose of this judgment is to separate control of Aluminum Ltd. from Alcoa and thereby allow the Canadian company complete freedom to compete in the United States market.

claimed that the monopoly was acquired by restrictive contracts and oppressive tactics, including discriminatory prices and the squeezing of price spreads between virgin ingot and aluminum sheet for the purpose of eliminating new competitors. In order to obtain effective relief —in order to re-establish competition in the aluminum industry—the government requested Alcoa's dissolution.

After a lengthy trial, the District Court on June 23, 1942 entered an opinion holding the defendents not guilty and ordering the petition dismissed (44 F. Supp. 97). This decision was reversed, however, by the Circuit Court of Appeals (C.C.A. 2d)[6] on March 12, 1945 in one of the most celebrated judicial opinions of our time. Judge Learned Hand ruled that Alcoa was an illegal monopoly at the time of trial; that the company had monopolized the aluminum sheet market and squeezed independents out of the fabricating business; and that Alted (Alcoa's Canadian subsidiary) had entered into agreements with European aluminum producers which affected imports into the United States.

From a legal point of view the Hand decision was a milestone, for it finally interred and reversed the old dictum that mere size is no offense under the Sherman Act. "Size," Judge Hand ruled, "was not only evidence of violation, or of potential offense, . . . it was the essence of the offense. Size, meaning market control, was what competition and monopoly were about. All other aspects of the case were subordinated to the central and decisive fact that the Aluminum Company of America, many years after its patents had expired, made, and then fabricated, or sold, over 90 per cent of the virgin aluminum used in the United States. Its arrangements with foreign companies for dividing world markets were further evidence of monopolizing. That it had engaged in deplorable tactics to prevent other companies from entering the field helped compound the offense. But the case was proved, in Judge Hand's view, by showing the company's market power. It made over 90 per cent of the virgin aluminum, and therefore had monopoly power."[7]

In sharp contrast to the Court's willingness to pronounce Alcoa a monopoly stands the Court's refusal to break up that monopoly. On the problem of relief the Court merely recommended that remedial measures be withheld until such time as the District Court could evaluate the effects of the government's program for the disposal of surplus aluminum plants. Only if this disposal program failed to create substantial competition in the industry was the trial court authorized to

[6] The case was certified to the Circuit Court of Appeals (C.C.A. 2d) on June 12, 1944 (322 U.S. 716), because the Supreme Court was unable to obtain a quorum to sit on the appeal (320 U.S. 708).

[7] Eugene Rostow, *A National Policy For The Oil Industry* (1948), p. 127.

consider dissolution. In other words, the task of creating competition in the aluminum industry was shunned by the Court and "assigned" to the disposal agency of the government.

Perhaps, on the face of it, this solution of the relief problem seems plausible, especially since the objectives of the Surplus Property Act of 1944 coincided in many respects with those of the antitrust laws. Under the Act, surplus government plants were to be sold in a manner:

> to give maximum aid in the re-establishment of a peacetime economy of free independent enterprise . . .
> to discourage monopolistic practices and to strengthen and preserve the competitive position of small business concerns in an economy of free enterprise . . .
> to foster the development of new independent enterprise . . .
> to dispose of surplus property as promptly as feasible without fostering monopoly or restrain of trade.

Preference was to be given to smaller purchasers to an extent consistent with "the usual and customary commercial practice." Above all, no disposal agency was even to begin negotiations for selling a plant valued in excess of $1,000,000 without first being advised by the Attorney General whether the proposed disposition would violate the antitrust laws. Impressed with these provisions of the Surplus Property Act, the Court thought that the prospects for competition in aluminum were bright and that the disposal of government plants might make the dissolution of Alcoa superfluous.

The Court was mistaken—if not naive—, however, to think that a disposal of surplus aluminum plants could stimulate competition sufficiently to obviate the necessity of dissolving Alcoa. The Court failed to recognize that its refusal to deal with the specifics of relief confined the disposal agency to a limited and narrow course of action. Faced with an Alcoa of colossal dimensions, the disposal agency was forced to adopt a program which would create new producers of substantial enough size and integration to compete effectively with the undiminished monopolist. The disposal agency had no power to reorganize the facilities owned by Alcoa. It could hardly dispose of the government plants to a large number of independent concerns *in*capable of coping with Alcoa's position of dominance and entrenchment. The agency chose the only feasible alternative: it brought into being two new integrated producers, and created them in the image of Alcoa. It elected a course of action made inevitable by the Court's refusal to deal with the problem of Alcoa's size.

Had the Circuit Court seriously attacked the problem of relief, it would have appreciated the importance of reorganizing Alcoa's structure; it would have recognized that such reorganization was an essential

prerequisite to stimulating greater competition in the aluminum industry and putting that industry on a broad base of independent competing producers. As things turned out, the structure of the aluminum industry *was* reshaped after 1945, but this was due almost entirely to the actions of the War Assets Administration rather than to the relief granted by the Circuit Court.

The 1945 decision was not the end of this case, however, for both Alcoa and the government were permitted to seek further relief. Accordingly, when the disposal program of the War Assets Administration was completed, Alcoa petitioned the Court (March, 1947) to declare that it no longer had a monopoly of the ingot market. In September, 1948 the government also filed a petition alleging that competitive conditions had *not* been re-established in the aluminum industry; that Alcoa had continued to dominate and control the aluminum ingot market; and that, only through divestiture by Alcoa of plants and other properties, could competitive conditions be established. The government petition attempted to show that "divestiture of Alcoa is practicable; that at least one new domestic integrated producer can be established as part of a program to create competitive conditions; and that following divestiture Alcoa will continue to be a fully integrated producer, under no competitive disadvantage, and with such facilities, production, sales volume, and ability to expand as will permit and encourage it to grow with the rest of this expanding industry." The petition attempted to demonstrate that "a fourth producer can be established without disintegrating Alcoa"; that "the structure of Alcoa is not that of an inseparable entity, but of duplicate facilities which fulfill the needs of market control rather than integrated efficiency."[8]

These issues were tried before Judge Knox in 1949 and the Court's opinion was handed down on June 2, 1950. The Court, in denying both petitions, found that competitive conditions had *not* been restored in the aluminum industry and that the government was entitled to further relief. The relief granted by the Court included the finding that certain provisions in patent licenses issued by Alcoa were unenforceable; and that persons who held stock in both Alcoa and Alted (the Canadian subsidiary) be required to divest themselves of the stock in either of the two corporations. The Court retained jurisdiction over the case for another five years during which time both parties, if conditions so warrant, can petition the Court for further and more complete relief.

[8] The government relief petition was exceedingly mild. It merely requested a partial horizontal disintegration of Alcoa. What the government should have demanded as a minimum additional requirement was that Alcoa be enjoined from any further *vertical* integration—especially in the fabrication field. Some such requirement—limited perhaps to a period of five years—was essential to deprive Alcoa of its power to squeeze independents in the future as it had done in the past.

The Court's opinion is disturbing for a number of reasons:

1. One is the inadequate relief granted and the dim prospects for further relief. Judge Knox seemed satisfied with the industry's present structure and expressed little concern over the small number of firms in the field. Disregarding almost entirely the implications of the three-producer oligopoly, the Court focused its primary attention on the ability of Reynolds and Kaiser to survive and expand. It is likely, therefore, that no reorganization of the aluminum industry by judicial action will take place in the next five years; that at the end of this period—if Reynolds and Kaiser hold their own—the Court will pronounce competitive conditions in aluminum to have been re-established; and that the Court will then terminate its jurisdiction in the case.

Needless to say, Kaiser and Reynolds *will* survive and the *status quo* in the industry *will* be maintained during the next five years. This outcome seems certain because Alcoa—in order to forestall any future relief action by the Court—will refrain from expanding its share of the market. By exercising self-restraint, Alcoa will prove to the Court that Kaiser and Reynolds can maintain their market position, and possibly, improve it. By judiciously avoiding any aggressive or expansionary activity, Alcoa can thus effectively bar the government from showing the need for further relief in the crucial five-year period. By pursuing a "live and let live" policy—which has proved so effective in other industries—Alcoa can then insure the termination of the Court's jurisdiction by 1955. Given the present high level of business activity, such a conservative course of action need by no means be unprofitable.

2. The second cause for concern is the precedent which the Knox opinion sets with respect to future antitrust cases involving the "Big Three" and the "Big Four." The government brief dwelt at considerable length on the fact that failure by the Court to grant divestiture relief in this case would be tantamount to judicial approval of a three-producer industry. The Court's refusal to divest Alcoa and, thus, create at least one additional domestic producer must, therefore, be construed as a court sanction for the type of structural organization now prevailing in the aluminum industry. This, no doubt, will prove a damaging precedent in some currently pending cases, *viz., United States* v. *United Shoe Machine Corporation, United States* v. *Armour, Swift, et al.,* etc.

Furthermore, the Court's refusal to concede that in an industrial structure of this sort, Alcoa, as the dominant firm, exercises control over its competitors seems ominous. The Court ignored the zone system of pricing enforced by Alcoa and the monopolistic significance thereof. The Court dismissed the fact of price leadership as evidence of Alcoa's undiminished monopoly power. The Court failed to appreciate the fear

engendered among fabricators that Alcoa, because of its dominant position, could ruin them by simple refusal to sell (or, as it is euphemistically called, maintaining the right to "select its customers"). The Court thus held invalid some of the more basic elements of the "parallel action" theory which is essential in proving an oligopoly case. This opinion may, therefore, become a substantial obstacle in the future prosecution of cases involving companies in highly concentrated industries.

3. A third cause for concern is the Court's effort to establish a foreign producer as the fourth competitor in a highly concentrated domestic industry. The Court hoped to accomplish this by separating the control of the Canadian company from Alcoa.

Realistically viewed, however, such action is unlikely to promote a more competitive market in the United States for a number of reasons: (a) Despite the change in stock control, the Canadian company will not become an active competitor, either in the domestic ingot or the fabricated aluminum market, since the largest consumers of ingot in the United States are the three primary producers (Alcoa, Reynolds, and Kaiser) and since Alted does not have the facilities for expanded participation in the American fabricated aluminum market. (b) Furthermore, Alted is Canada's sole producer and therefore enjoys an undisputed monopoly position in its own country. (c) In addition, Alted has long been the motivating force in the cartelization of the world aluminum industry and will probably continue its efforts in that direction in the future. (d) Finally, if the Canadian company should ever initiate an aggressively competitive policy in the United States market, tariff barriers could always be raised sufficiently to "protect" our vital domestic industry. Keeping these facts in mind, it is difficult to conceive how a corporation so traditionally opposed to the competitive philosophy as Alted, can take the place of a fourth producer in the American aluminum industry.

4. There is one final aspect of the Court's opinion which is noteworthy since it indicates a possible direction of geographical expansion in the aluminum industry. As has been pointed out above, the Court opinion places great emphasis on the maintenance of the *status quo* in the industry. It is bound to discourage, therefore, any expansion of Alcoa's productive facilities (such as the company had contemplated in Alaska, for example). At the same time, the potential threat of Canadian competition might inhibit expansion by Reynolds and Kaiser —at least until such time as the nature of that competition has been determined. The Canadian company, by contrast, is free to expand without restraint and is currently doing so by adding substantially to its facilities in British Columbia.

The result is anomalous: Canadian facilities during the next five years will tend to expand while our own aluminum capacity may remain static. Thus, we may well become more dependent on a foreign producer for an increasing part of our national aluminum requirements. While Canada is unlikely to become a hostile nation in the near future, it would nevertheless be preferable to have such increased capacity within our own borders.

In summarizing the results of thirteen years of litigation in the *Alcoa* case, one is impressed with the insignificance of the relief obtained by the government. A company which had monopolized the aluminum industry for fifty years was allowed to remain intact. An economically mild—probably excessively mild—proposal for divestiture was refused. Once again, the courts took the easy way out. Judge Hand left the job of stimulating competition in this basic industry to the War Assets Administration. Judge Knox attempted to introduce a new competitor in the domestic market by cutting the *formal* ties between Alcoa and Alted. Both refused to undertake the kind of physical reorganization of the industry necessary to bring about a competitive structure consistent with the objectives of the Sherman Act.

The result is that aluminum today is a three-producer industry; that Alcoa, instead of being a single-firm monopoly, now exercises residual monopoly power through price leadership and other means; that the concerted action typical of oligopoly has replaced the unilateral action characteristic of monopoly. A ringing judicial denunciation of monopoly has produced little in the way of affirmative relief. Vigorous and effective competition has not been re-established in this basic and vital industry.[*]

[*] The author is indebted to I. Lewis Markus for his helpful comments and suggestions in the preparation of this paper.

LITTLE'S CRITIQUE OF WELFARE ECONOMICS

By KENNETH J. ARROW[1]

I

Prescriptions for economic policy have been an integral and, indeed, controlling part of the economist's activities since the days of Jean Bodin. Such recommendations can be interpreted as assertions that the proposed change will increase "the welfare of society," and therefore, by implication, involve a knowledge both of the consequences of the proposal for economic behavior and of the relation between such behavior and social welfare. Since Adam Smith, the central proposition has been that welfare can best be increased by relying on competition and self-interest, though exceptions to this rule were first given prominence by Marshall.[2] In this century, there has arisen a considerable literature dealing with the more precise and logical interpretation of these propositions. The discussion has taken several directions: (1) What is the meaning of increasing or maximizing "community welfare"? Both of the words in quotation marks lead to problems. (2) What are the precise statements of the "optimum" conditions? (3) What are the circumstances under which these conditions do not coincide with the operations of perfect competition? (4) What are the implications of the answers to (2) and (3) for practical economic policy, including the choice between capitalism and socialism and the proper economic policies under each?

Mr. Little's new book[3] has much to say about all four major issues of welfare economics, but particularly about the first. His fundamental thesis is that the policy recommendations of current work on welfare economics cannot be taken as a safe guide to action because they tend to disregard the problem of distribution of income and because the empirical assumptions are usually unrealistic. Supplemental to the major theme is a contrapuntal figure in the bass to the effect that the terminology used by welfare economists has strong emotive connotations, so that statements which are really logical deductions from doubtful postulates appear to be injunctions to action.

The earlier part of the book is devoted to a critical examination of some of the philosophical problems in the formulation of welfare economics, such

[1] The author is associate professor of economics and statistics at Stanford University. This paper was partly supported by the Office of Naval Research.

[2] *I.e.*, within the framework of orthodox theory. Of course, there had always been objectors, particularly among Continental authors, to the desirability of competition.

[3] I. M. D. Little, *A Critique of Welfare Economics* (Oxford, Clarendon Press, 1950), pp. 276.

as the meaning of welfare and its relation to choices actually made by individuals, the possibility and meaning of interpersonal comparisons and their relation to social welfare judgments, and the rôle of income distribution in welfare judgments. Two particular problems attract most of Little's attention: (1) If the effects of a policy only appear over time while at the same time the tastes of members of the society are changing, how can we have a criterion for an increase in welfare? (2) How are judgments of increase in social welfare related to ethical propositions on the one hand and to the distribution of happiness (real income) among individuals on the other? In connection with this analysis, there is a thorough examination of the view of the utilitarians and of the various schools of the "new welfare economics."

On the basis of these philosophical considerations, Little then proceeds to develop a set of sufficient conditions for an increase in welfare which take into account ethical views on income distribution. (He argues that establishing criteria, *i.e.*, necessary and sufficient conditions, is too ambitious a task.) These conditions are related to the well-known compensation principle. On the basis of them, he then re-examines the usual optimum conditions for a welfare optimum (*e.g.*, equality of marginal rates of substitution among different individuals) and argues that because some of the empirical assumptions needed for their derivation are not met, the usual policy implications drawn from them are not to be accepted. He then examines a number of specific policy issues, such as pricing policy for nationalized enterprises, criteria for making indivisible investments, and the gains from foreign trade, partly in the light of his previous arguments and partly with a view to issues of practical possibilities.[4]

As can already be seen from the brief summary given above and as will be seen further below, the author has courageously faced the inherent difficulties in the subject matter and has thought perceptively and intelligently about them. The relation between welfare and actual behavior of the individual, the rôle of ethical judgments in welfare economics, the necessity and difficulties of incorporating distributional considerations into policy recommendations, and the choices to be made when not all of the standard optimal conditions can be satisfied are real and major difficulties in the application of economic theory to life. The lone fact that the right questions have been raised would make the book worth careful reading.

But the book is provoking as well as provocative—provoking because of its lack of rigorous thinking and its polemic and repetitious style. The specific conclusions, I believe, do not follow in any very logical way from the premises, and I feel that they are distinctly less acceptable than even the doubtful results of the current doctrine. There is indeed a strong tendency to derogate precision in thought, and, as a result, many statements are made which are based neither on rigorous reasoning or on careful empirical observations. Conversely, many of the so-called "failures" of current welfare

[4] Little also has a revised version of the theory of consumers behavior, based on Professor Samuelson's concept of "revealed preference," of which he makes some terminological use throughout the book, and an interesting discussion of the problem of evaluation of real national income. These points will not be discussed here for lack of space.

economics could easily be remedied by deriving new formulas and others could be resolved by empirical inquiry.

In the following sections, I will take up in turn: (1) Little's philosophical discussion of the underlying concepts of welfare theory; (2) his proposed new set of criteria for an increase in welfare; and (3) his discussion of the standard "optimum" conditions and of the policy implications of welfare economics, particularly in regard to decisions on indivisible investments and marginal-cost pricing.

II

Little is at his best in discussing some of the philosophical problems in the formulation of welfare economics.[5] As noted earlier, he raises two principal questions in this sphere: (1) the relation between overt choice and welfare; (2) the meaning of the distribution of welfare among individuals.

1. He points out that it requires a definite value judgment to assume that when an individual is in a chosen position, he is in a higher state of welfare. For one thing, there is obviously no logical necessity for giving any respect whatever to individual desires; that we all do so is the result of a certain cultural pattern of ethics. Also, of course, it might well be argued that the overt behavior of individuals in the market-place does not reflect their "true" preferences in some sense, though this is, in another sense, an empirical proposition rather than a value judgment, or would be if we could define "true" preferences. But Little's principal stress is on a somewhat different point. Following Professor Samuelson's technique of "revealed preference," Little argues that an individual has moved to a better position if he can now afford to buy the goods he bought earlier but does not. If, however, the individual's preference pattern has shifted in the meantime, the criterion proposed is inapplicable.

As stated, it seems to me that the argument is more relevant to the question of determining from price-quantity data alone whether or not an improvement has taken place in time than to the usual theoretical issue of comparing two alternative *potential* situations with all preference maps known. However, it is of some importance to observe that if any proposed policy takes time to carry out, one must take account of possible changes in tastes, not only spontaneous ones but more especially the changes associated with aging. In the long run, of course, the Keynesian dictum applies; we really cannot speak of any one individual as being made better off by a policy which takes fifty years to work out, since most individuals will not be there to enjoy the benefits.[6]

[5] See Chapters I, III, IV, V and parts of VI and VII.

[6] Little also includes changes in tastes caused by external relations in consumption, such as pecuniary emulation. These, of course, have long been recognized as a special problem even within the frame of ordinary static welfare economics and are not in the same class as the dynamic changes of tastes. See M. W. Reder, *Studies in the Theory of Welfare Economics* (New York, Columbia University Press, 1947), pp. 64-67; G. Tintner, "A Note on Welfare Economics," *Econometrica*, Vol. 14 (Jan., 1946), pp. 69-78. Little later errs in the statement of the modification of the "optimum" conditions in this case; see Section IV below.

Formally, this difficulty may be avoided by the same device which Professor Hicks has used to "dynamize" the theory of consumer's choice[7]: the welfare of an individual must depend not only on his present but also his planned future consumption for the remainder of his life. We must even include the intended welfare of his heirs in the utility function of an individual; otherwise, how can we explain capital accumulation? Then a recommended policy should be accepted only if its effect on all the future consumptions is such as to raise the resultant utility. This "solution" implies, of course, that each decision is made with full awareness of all its implications for the future.

Little, however, rejects the development of a dynamic welfare economics on the grounds that it cannot lead to any definite conclusions. This position seems somewhat unsatisfactory; because a field has not yet been successfully explored, it hardly follows that it cannot be. It is a legitimate criticism of static welfare economics that it does not take account of such time elements; but to assess the seriousness of the criticism, one must have some sort of dynamic model of welfare economics if only to serve as a standard of comparison.

As a resolution of the problem raised by changing tastes, Little makes the interesting suggestion that welfare pertains to "average men" of various social groups, *e.g.*, individuals of a given age. While Little does not elaborate too much, this position seems to me to be motivated by a postulate of symmetry; all individuals are the same from the social viewpoint, so that a transformation of society which amounts to interchanging the positions of individuals (in all relevant senses) would leave invariant the social welfare. Then social or economic welfare would depend only on the statistical joint frequency distribution of real income and those variables, such as age and marital status, which affect tastes. It is, I believe, presupposed that tastes, *i.e.*, preference maps, are in fact almost completely determined by the listed variables; otherwise, we could hardly ascribe a consistent preference pattern to each of the social *groups* defined by the various values of the variables.

2. After discussing the relation between choice and welfare for the individual, Little raises the problem of the distribution of welfare among individuals. He argues that if by "real income" is meant "happiness," then there is nothing wrong with interpersonal comparisons, at least qualitative ones of the form "A is happier than B." Happiness or satisfaction is a relatively objective concept, and such comparisons can be made as descriptive and not value judgments by inferring mental states from objective behavior. However, in any case, happiness is by no means to be identified with social welfare, which is definitely a question of ethical judgments. From this point of view, he agrees with the position first advanced in Professor Bergson's remarkable paper,[8] which, as Little points out, represents a distinctly different position from the utilitarian, which would hold social

[7] J. R. Hicks, *Value and Capital*, 2nd ed. (Oxford, The Clarendon Press, 1946), Chap. XVIII.

[8] A. Bergson (Burk), "A Reformulation of Certain Aspects of Welfare Economics," *Quart. Jour. Econ.*, Vol. 52 (Feb., 1938), pp. 310-34.

welfare to be a sum of individual happinesses and therefore an objective, if not readily measurable, quantity.

In the course of the discussion he argues that many economists seem to have thought they were making objective statements about increasing welfare when in fact they were making value judgments and that their statements had important effects because of the emotive significance of the words they used. A charge such as this, especially when repeated rather frequently, should be supported by a bill of particulars. No examples are cited, and while I do not doubt that some economists may have been misled by their own terminology, I do not believe in fact that there are many such economists nor that there have been serious effects on either thought or action.

Little's general conclusion seems to be the same as Bergson's; we start with a value judgment that one situation is better than another if everyone is better off in the second case than in the first, and in any given context we can order welfare distributions according to our value judgments. Now if individual choices have no external economies or diseconomies and if we say nothing about the range of possible individual tastes, then, as I have shown elsewhere, the above viewpoint is contradictory to some very reasonable value judgments.[9] The answer is that individual estimates of social welfare must be included in the individual's utility function; *i.e.*, the social distribution of real income, as seen by the individual, is a good which enters on a par with other commodities. Hence, we *must* have a certain type of external relation in individual choices. I think this will lead to the conclusion that making everyone better off need not be a social improvement if it distorts the income distribution sufficiently.

The hard problem, it seems to me, arises at the point where Little and everyone else stops. It is all very well to say that the effects of a proposed change on income distribution must be taken into account in deciding on the desirability of the change; but how do we describe a distribution of real income? Admittedly, the choice between two income distributions is the result of a value judgment; but how do we even formulate such judgments?

They cannot, strictly speaking, be made in terms of money income alone, as Little himself points out (he gives an excellent refutation of Professor Lerner's argument to the contrary). Since individuals have different tastes, equal money incomes cannot always mean equal real incomes. For suppose that in an initial situation the equivalence did hold. Then certainly we can find a shift in relative prices which will make some people worse off and others better off, keeping money incomes and the general price level constant, so that in the second situation equal money incomes will no longer coincide with equal real incomes. This difficulty is a very real one. The only way out that I can see is to carry through Little's suggestion that welfare is to be interpreted in terms of "average men." If we assume that tastes are almost completely determined by a few objectively determinable variables, such as age, sex, marital status, and geographical location, then welfare judgments will be based on the joint distribution of those variables and money income;

[9] *Social Choice and Individual Values*, Cowles Commission Monograph No. 12 (New York, John Wiley and Sons, 1951), pp. 71-73.

i.e., an individual will be identified, from the social point of view, by the values of those variables.

Little, however, goes still further. He repeatedly assumes that it is meaningful to compare two situations with respect to their relative income distributions even when total income has changed. No operational interpretation of this comparison is indicated. Presumably the equivalence of two income distributions means that in some sense the *relative* utilities of different individuals are the same in the two situations. This implies, as far as I can see, the existence of some measure of utility which possesses an interpersonally comparable cardinal significance. We have already seen that money income cannot serve as the utility measure. Even if we agree with Little that "happiness" or utility is interpersonally comparable in an ordinal sense (A is better off than B), I do not see any natural cardinal measure of real income to be used in forming Little's relative income distributions.

It would, of course, be very useful to be able to compare welfare distributions independently of total income. The aim is the reciprocal of the justly criticized Kaldor-Hicks approach[10]: where Mr. Kaldor and Professor Hicks seek to compare different production levels independently of income distributions, Little wants to compare different distributions independently of income. I am afraid that, desirable though such separation would be from the viewpoint of simplification, no such separation is likely to be valid. We come back to Bergson's original formulation of the social welfare function; we simply must rank in order of preference *absolute* welfare distributions and cannot simplify the comparison in any way by analyzing such a distribution into "total income" and "relative income distribution."[11]

Little's conclusions from his discussion of welfare distribution are somewhat contradictory. On the one hand, he concludes that the concept of an "ideal" distribution is meaningless because of the vagueness involved in the concept of distribution; on the other hand, he believes that it is possible to compare any two distributions independently of total real income.[12] It would certainly seem that if we can make the second statement, we can find a distribution which is better than any other (apart from some technical mathematical problems of the existence of a maximum).

III

On the basis of his philosophical analysis, Little seeks to establish a set of sufficient conditions for an increase in welfare.[13] Because they seem to

[10] See W. J. Baumol, "Community Indifference," *Rev. Econ. Stud.*, Vol. 14, No. 1 (1946-47), pp. 44-48; N. Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *Econ. Jour.*, Vol. 49 (Sept., 1939), pp. 549-52; J. R. Hicks, "The Foundati 3 of Welfa.e Economics," *Econ. Jour.*, Vol. 49 (Dec., 1939), pp. 698-701, 711-712.

[11] The above discussion is not meant to be rigorous and cannot be, since the proposition treated does not seem capable of a rigorous formulation. I have been, in effect, seeking unsuccessfully to restate Little's comparisons in a meaningful form.

[12] Actually, as we shall see, it is possible to restate Little's propositions in a way which involves only comparisons of distributions with a given real income.

[13] Chapters VI and VII and Appendix.

represent such an important step forward, I would like to examine them at considerable length. The discussion may be found somewhat technical and can be skipped with little loss of continuity.

Little starts from the well-known Kaldor-Hicks criterion: we should change from situation A to situation B if there is some redistribution of the goods in the second situation which will make everyone better off than in situation A. He objects to this criterion on two grounds: (1) that it ignores income distribution, and (2) that it leads to the paradoxical conclusion, first pointed out by Professor Scitovsky in his brilliant paper,[14] that it can be recommended to move from A to B and then from B to A again. He therefore introduces the "Scitovsky criterion," which is the non-fulfillment of the Kaldor-Hicks criterion for movement in the opposite direction, from B to A. That is, the Scitovsky criterion is said to be satisfied if there is no redistribution of the goods in situation A which will make everyone better off than in situation B.

We thus have three conditions which are relevant for deciding whether or not to change from A to B: the Kaldor-Hicks criterion, the Scitovsky criterion, and the relative desirability of the income distribution in the two situations. Each criterion may or may not be fulfilled, and all eight combinations are possible.[15] For each case, Little indicates what action should be taken. "All possible combinations of answers may be set out in a table thus:

TABLE I

Case No.	1	2	3	4	5	6	7	8
Criteria								
Kaldor-Hicks criterion satisfied?	Yes	Yes	Yes	Yes	No	No	No	No
Scitovsky criterion satisfied?	Yes	Yes	No	No	No	No	Yes	Yes
Any redistribution good?	Yes	No	Yes	No	No	Yes	No	Yes
Deductions								
Should the change be made?	Yes	?	No	No	No	No	No	Yes
Should redistribution without the change be made?	No	No	Yes	No	No	Yes	No	No

Of these logical possibilities, numbers 1, 4, 5, 6, and 7 seem to be obvious, and do not require discussion. Number 2 is clearly doubtful, but it should seldom remain doubtful because it follows from our argument that, if compensation is not regarded as unfair, or undesirable in itself, it should be paid in order to turn case 2 into case 1. Cases 3 and 8 are the interesting ones" (p. 103). This quotation is then followed by a discussion of those two cases.

This quotation seems on the face of it to be of extraordinary significance.

[14] T. Scitovsky, "A Note on Welfare Propositions in Economics," *Rev. Econ. Stud.*, Vol. 9 (Nov., 1941), pp. 77-88.

[15] I wish to mention that in a previous work I erred in thinking that in any case either the Kaldor-Hicks criterion was satisfied or the Scitovsky criterion was not; see Arrow, *op. cit.*, p. 43, equation (6). My colleague, T. Scitovsky, has pointed out to me that if A and B are both optimal in the Pareto sense, then the Kaldor-Hicks criterion does not hold in either direction, which implies that the Scitovsky criterion is fulfilled.

If we follow Little and grant that the income distribution criterion is meaningful (remember that the comparison is of relative, not absolute, income distributions), then we appear to have a reasonably clearcut formula for deciding what to do in any concrete situation (provided, of course, the necessary compensations can be calculated). However, Little gives essentially no discussion; I can only justify the table by introducing extremely arbitrary assumptions.

In the first place, the question which the table is designed to answer is none too clear. Most discussions of welfare economics have been put in the form, "shall we change from A to B?," but usually it has been assumed that the change is not temporal but rather potential. Hence, the two situations being compared should enter symmetrically. Little seems to envisage a choice among three alternatives: changing from A to B, making a redistribution of income at A but not a basic policy change, and leaving the *status quo*. Now either we assume that we have complete freedom to make lump-sum transfers, in which case the alternative of changing to B and then redistributing income should be included, or we do not make this assumption, in which case we should simply have the two alternatives of changing to B or leaving the *status quo*. (It may be added that the latter possibility is really the most general case; if we can choose between all possible pairs of situations, then we can decide what redistributions to make by calling a situation obtained by redistribution a new situation. Thus, in the set of alternatives which Little seems to be considering, let A′ be a situation obtainable from A by redistribution; if we could choose between any pair of alternatives, then assuming consistency in the choices, we would choose that one of A, A′, B which was preferred to both others.) It is immediately clear that if we permit lump-sum transfers in both situations, the comparison between the income distributions at A and at B are irrelevant; what we wish to compare are the best distributions obtainable by lump-sum transfers starting with A with the best distribution obtainable by lump-sum transfers starting with B. If we suppose, as Little seems to, that we can order relative distributions independently of total income, then we could proceed immediately to the best relative distribution in each case; then in one case, everyone would be better off than in the other. This is indeed the procedure which Little attributes to Bergson and attacks on the ground that the concept of an "ideal" distribution is too vague to be operational.

Even if we take Little's peculiarly asymmetrical point of view,[16] it is not easy to see how he arrives at his results. First, suppose the Scitovsky criterion is not fulfilled. There is a redistribution of the commodities in A, leading to a new state A′, which will make everyone better off then in B. Hence, the change to B should not be made, as in cases 3-6. However, the question remains whether or not there should be a redistribution from A to some A′; clearly, this should be done if and only if there is some A′ which is distributively superior to A. Now, if B is distributively superior to A, Little would argue that it is shown that there is some distribution better

[16] Little is not completely consistent; the payment of compensation to turn case 2 into case 1 of course occurs after the change is made.

than that at A, and hence an A′ better than A; this yields cases 3 and 6. If B is not better than A distributively, however, it is not proven that A is better than any A′, as Little seems to assert in cases 4 and 5. The only justification I can see is that we will certainly not move to B, since we know there is a better alternative, but not knowing whether or not there is an A′ better than A (distributively), we will stay put. This procedure is, of course, definitely biassed in favor of the *status quo*.

Little also gives a sufficient condition for a change from A to B, without regard to redistributions of A: *if the Scitovsky criterion is satisfied and the distributional change good, then the change should be made.* The reasoning is as follows: We should be able to find a situation A′ by redistribution from A which is distributively equivalent to B and therefore distributively superior to A. Since it has the same (relative) distribution as in B, either everyone is better off than in B or everyone is worse off. The former alternative is excluded since the Scitovsky criterion holds; therefore, everyone is better off in B than in A′. But A′ is at the same income level as A and distributively superior to it; therefore, B is better than A. This argument underlies cases 1 and 8; however, the possibility of an A′ (obtained by redistribution from A) being still better than B is not excluded. Perhaps Little would say that since it cannot be inferred from the stated criteria whether or not such an A′ exists, we should move to B since we know that to be better. (Actually, we do know there is an A′ better than A; why is B preferred?) Interchanging A and B in the preceding reasoning, we get another principle: if the Kaldor-Hicks criterion is not satisfied and the redistribution is bad, then A is better than B. Hence in case 7, we know that A is preferred to B, while we do not know if there is any A′ preferred to A; therefore, in view of the preference for the *status quo*, stay at A. (This principle also applies to case 5.) In case 2, we cannot infer anything about the relative desirability of A, B or an A′; to be consistent, I should think that A would be chosen.

To sum up, Little's table can be justified in a fashion if the following assumptions are made: (1) the choice is among the present situation, an alternative situation, and a redistribution in the present situation (but not one in the alternative situation); (2) only information supplied by the three given criteria can be used (thus, we could not infer that there was a redistribution of A superior to A directly but only if B is distributively superior to A); (3) we can compare the (relative) distributions of two situations with different real incomes; (4) the *status quo* is preferred unless there is some alternative definitely shown to be better by the information under (2); (5) if both the alternative situation and the redistribution of the present situation are preferred to the present situation, then the former is chosen. I would say that not one of these assumptions is truly acceptable.

Little is aiming at an important issue: how do we compare non-optimal situations. This corresponds to his implied preference for piecemeal reform, gradually improving matters, over Utopian jumping to an all-over optimum. In principle, the Bergson social welfare function seeks the same goal, since it is an ordering of all possible utility distributions. However, Little quite

correctly remarks that, as applied, the social welfare function has been used only to establish the proposition that the maximum state of social welfare is achieved when all the Pareto optimal conditions are met and the distribution of welfare is "ideal." What seems most relevant in comparing non-optimal situations is the case where no redistributions are permitted, for the reason we do not move to Pareto optima is that our powers of redistribution are limited by practical and political considerations.

For such comparisons, we then have the theorem of Little's italicized above. Now for this purpose, we do not need actually to make comparisons of distributions at different levels of national income, as Professor Samuelson has remarked.[17] The proof given earlier does not require that A′ be "distributively equivalent" to B; all that is needed is that everyone be better off in B than in A. Hence, Little's theorem may be stated this way: *B is preferred to A if there is a situation A′ obtainable by lump-sum transfers from A such that A′ is judged to be better than A while everyone is better off in B than in A′*. This proposition is thoroughly in accord with the Bergson analysis.

But once stated this way, we see that there are other theorems of the same type which, however, cannot be expressed in terms of the three criteria used by Little. For example: *B is preferred to A if there exists a situation B′ obtainable by lump-sum transfers from B such that everyone is better off in B′ than in A and that B is judged to be better than B′*. (Note that the comparison between A and A′ in the first theorem and between B and B′ in the second is a comparison of different distributions with the same national income, in a sense.) Other theorems could easily be devised involving chains of intermediate situations. The usefulness of such theorems is hard to assess.[18] Apart from the difficulties involved in evaluating the various comparisons in a practical situation, the theorems do not seem to provide the basis for choice in enough cases. In particular, the possibility of moving to a situation with a very much higher real income but undesirable distribution seems to be excluded from a decision.

IV

Little discusses the usual optimum conditions from the viewpoint of his criterion for an improvement in welfare.[19] Since any movement to a Pareto optimum necessarily satisfies the Scitovsky criterion (otherwise there would be some position in which everyone was better off than in the Pareto optimum, contrary to definition), a policy of satisfying the optimum conditions is justified provided the effect on distribution is favorable.[20] He then considers in turn each of the various standard conditions (equality of

[17] P. A. Samuelson, "Evaluation of Real National Income," *Oxford Economic Papers*, N.S., Vol. 2 (Jan., 1950), p. 29, n. 2.

[18] It is to be observed that in these theorems, it is not implied that either A or B is the present situation.

[19] Chapters VIII and IX.

[20] Little makes the curious error of asserting that when there are external relations in consumption or production, the usual optimal conditions are still necessary, though not sufficient. This is in general false; external relations will usually require unequal (private) marginal rates of substitution to achieve an optimum position.

marginal rates of substitution and of transformation, etc.). He has a rather nice discussion of the consequences of putting one set of optimum conditions into effect without the rest. He points out that equalizing the marginal rates of substitution in consumption is an improvement (provided distributional effects are favorable) regardless of the degree of optimality in the production process; but equalizing marginal rates of transformation when the optimum exchange conditions are not fulfilled cannot be so well justified. Little is particularly concerned about the fact that the optimum conditions for allocation between leisure and goods and between different kinds of labor cannot be expected to be fulfilled, the former because the hours of labor cannot be individually adjusted at will, for technological reasons, and because both direct and indirect taxes fall on goods but not leisure, the latter because of transfer costs and also because of the effect of taxes in distorting relative wages. As he points out, the well-known rule that price should equal marginal cost can no longer be derived. From this conclusion and his other critical observations on welfare economics in general, he infers that no rule of this type is of much use and all that can be said is that prices should bear some reasonable relation to costs.

I feel that the inference goes too far. For the moment suppose we have no difficulty with allocation between different kinds of work, say because laborers are indifferent among jobs and transfer costs are absent; we have only the first problem, that hours of labor must be the same for all to avoid excessive technological costs. Let us suppose that the number of hours fixed is optimal, taking into account preferences and costs. Suppose further for simplicity that labor is the only factor. Then for an optimal allocation of resources the ratio of the marginal physical productivities of labor in any two industries must equal the marginal rate of substitution in consumption. If we sell at fixed prices, then the marginal physical productivities of labor in different industries must be inversely proportional to the prices. If wages are taken as *numéraire*, then the conclusion is reached that prices should be proportional to marginal costs. The common ratio of price to marginal cost serves here as a distributive rather than an allocative mechanism. In other words, the efficiency argument for marginal cost pricing is not altered; we can, however, also reach efficiency in other ways which may be superior distributively. If the ratio of average to marginal cost differs considerably in different industries, there seems no conceivable way of concluding that covering average costs is a reasonable criterion.

The second difficulty, allocation among different types of labor, is more serious. One can only hope it possible to arrange for transfer costs to be borne socially and to have a system of taxes and subsidies on different types of labor to compensate for variations in their desirability.

Little then turns to some policy problems,[21] principally the criterion for indivisible investments and the pricing policy for nationalized enterprises. According to Dupuit and Marshall, an indivisible investment should be made if a perfectly discriminating monopoly could cover costs subsequently. This

[21] Chapters X and XI. He also has some interesting remarks on the evaluation of real national income and the gains from foreign trade in Chapters XII and XIII.

does not mean that the plant once built should be operated as any type of monopoly, simple or discriminating. Little criticizes consumers' surplus on three grounds: (1) it is based on partial analysis and ignores the existence of substitute and complementary commodities; (2) there is no way of subsequently checking to see if the criterion was satisfied (since presumably discrimination will not be allowed); (3) if there is a discrepancy between price and marginal cost in other industries, then the entrance of a new plant causes losses of producers' surplus which should be offset against a gain in consumers' surplus. He proposes as an alternative building a plant when a simple monopoly could cover costs, and making this operational by permitting the undertaking to act in that way.

His first and third arguments simply mean that a more complicated formula than the simple consumers' surplus is called for. There is no analytic difficulty in supplying such formulae; the solution of the first problem was given by Professor Hotelling in 1938.[22] Nor has the fact that the proper formula cannot be represented in two dimensions anything to do with its practicality. Any type of consumers' surplus, simple or generalized, is based on the cost and demand equations of the real world, which must be estimated by hard statistical or other empirical work whether one commodity is involved or several.

The second argument is no more valid. If we compute consumers' surplus on the basis of an estimated demand curve, we can after the event find out whether or not the observed demand lies on the estimated curve.[23] Or we might work on the basis of questionnaires, polls, and perhaps marketing experiments. Little seems to feel that the market is the only source of data on consumer preferences. To secure an optimal allocation of resources when there are indivisibilities, we must have more direct information than the market can supply, perhaps even properly designed voting.

[22] H. Hotelling, "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," *Econometrica*, Vol. 6 (July, 1938), pp. 242-69. A formula which answers the third question has recently been given by M. Boiteux, "Le 'Revenu Distruable' et les Pertes Economiques," *Econometrica*, Vol. 19 (Apr., 1951), pp. 112-33, esp. 132.

[23] I am indebted for this point to my colleague, P. Baran.

COMMUNICATIONS

Note on Mr. Schutz's Measure of Income Inequality[1]

The measurement of inequality involves two types of descriptive devices:

1. A *table* or *chart* by means of which the different *parts* of a distribution may be compared.
2. An over-all *index* for comparing different distributions *as a whole*.

Mr. Schutz deals with both types. While his "type 1" chart is a very useful device, his "type 2" coefficient is neither new nor superior to other measures.

The "type 1" chart used by Mr. Schutz plots income, as a proportion of average income, against the usual abscissa of the Lorenz curve, *i.e.*, the proportion of income recipients having the given income or less. It is thus the well-known "graduation curve" or "ogive curve" with the axes reversed from their customary position, using income, measured in units of average income, as the variable. The vertical deviations from unity are shaded in.[2] Mr. Schutz effectively demonstrates the superiority of this ogive curve over the Lorenz curve for the purpose of comparing the different parts of a distribution, particularly when negative incomes are involved.[3]

The "type 2" coefficient proposed by Mr. Schutz is the absolute value of the shaded area on his chart.[4] This is, in fact, quite an old device known as the "relative mean deviation," "index of variability" and, no doubt, by many other names. It is simply the mean deviation divided by the mean. It was discussed, quite thoroughly, by Yntema in 1933 and Dalton in 1920; Yntema traces its use back to Ricci, in 1916.[5]

[1] Robert R. Schutz, "On the Measurement of Income Inequality," *Am. Econ. Rev.*, Vol. XLI, No. 1 (Mar., 1951), p. 107.

[2] *I.e.*, the distances $(x-\bar{x})/\bar{x}$ where x is a given income and $\bar{x}$ is average income.

[3] One of his *minor* criticisms of the Lorenz curve would, however, appear to be based on a misconception. He points out that if one attempts to depict an income distribution cross-classified by some other attribute (*e.g.*, family units versus one-person units) on a single Lorenz curve, one may get absurd-looking results (Fig. 6, p. 116) which, moreover, vary "arbitrarily" according to the order in which the subgroups are entered on the curve. The answer is, of course, that few people would attempt to use a Lorenz curve in this way. The Lorenz curve is based on a ranking of income units according to income size, and obviously cannot be used when some other ordering is superimposed, which destroys the ranking according to size. What can be done—and is done—is to draw separate Lorenz curves for the subgroups, and one for the distribution as a whole.

[4] It can be expressed as $\frac{1}{n}\sum\left|\frac{x-\bar{x}}{\bar{x}}\right|$ (for ungrouped data) where x is a given income, $\bar{x}$ is the average income, n is the number of incomes, and the summation is over-all incomes.

[5] Dwight B. Yntema, "Measures of the Inequality in the Personal Distribution of Wealth or Income," *Jour. Am. Statistical Assoc.*, Vol. 28 (Dec., 1933), p. 423. H. Dalton, "The Measurement of the Inequality of Incomes," *Econ. Jour.*, Vol. 30 (Sept., 1920), p. 348. Umberto Ricci, *L'indice di Variabilità e la Curve dei Redditi* (Rome, 1916).

Mr. Schutz objects to the "crudity and ambiguity" of the Gini ratio on the grounds that the shape of the Lorenz curve "may be infinitely varied, due to different distributions of the inequality, without . . . any change at all in the value of the ratio of concentration" (p. 109). It is interesting to note that Dalton rejected the relative mean deviation and preferred the Gini ratio on very similar grounds. He pointed out that any redistribution among incomes larger (or smaller) than the average, which leaves the sum of such incomes (and hence the sum and average of all incomes) unchanged, will not affect the relative mean deviation, but will, in general, change other indices of inequality such as the Gini ratio or the coefficient of variation.[6]

These comparisons of sensitivity are not very useful unless, on the basis of a clearly defined concept of inequality, one can specify precisely the changes in the income distribution which the index should reflect. It can be said of any summary measure, such as an index number, average, or higher moment of a frequency distribution, that there is an infinity of changes in the data to which the measure does not respond. If the charge of "ambiguity" or "crudity" does not go further than this, we are merely criticising a "type 2" device for not being a "type 1" device. I suspect that this is what Mr. Schutz is doing in the passage quoted above.

How can one select an appropriate "clearly defined concept of inequality"? The purpose for which the index is to be used may or may not provide a guide. If the purpose is merely descriptive, involving, perhaps, implicitly a comparison with some ideal norm, such a choice would seem to be difficult. If, however, the purpose is the testing of hypotheses with regard to the causes or effects of inequality, a choice can be made pragmatically by investigating which of the possible indices is most closely related to the presumed cause or effect. There is considerable scope for empirical investigation along these lines.

If the purpose of the index does not enable us to choose between indices on "conceptual" grounds, there are a number of "practical" considerations on which a judgment can be based.

One of these is raised by Mr. Schutz when he discusses the problem of the measurement of inequality "between" groups (*i.e.*, groups defined by some attribute other than income). The coefficient proposed by Mr. Schutz to measure this (pp. 117-18) can be expressed algebraically as $\frac{1}{n}\sum_{j=1}^{N}\frac{|n_j(\bar{x}_j - \bar{x})|}{\bar{x}}$ where n is the number of incomes, n_j the number of incomes in the jth group, $\bar{x}$ the average income, $\bar{x}_j$ the average income of the jth group and N the number of groups. It is thus the relative mean deviation of the means of groups. Owing to the use of absolute values, however, it cannot be linked up with inequality *within* groups in any simple manner, to give the over-all inequality. If, on the other hand, we use the coefficient of variation, we can get a simple relationship, derived as in the analysis of variance.

Writing V for the over-all coefficient of variation, u for the coefficient of variation between groups, v_j for the coefficient of variation in the jth group,

[6] Dalton, *op. cit.*, pp. 351-52.

and using the symbols defined above, the following relationship can be derived:[7] $V^2 = u^2 + \sum_{j=1}^{N} \frac{n_j \cdot \bar{x}_j^2}{n \cdot \bar{x}^2} v_j^2$. The over-all inequality can thus be expressed as the sum of the inequality between groups and a sort of weighted average of the inequality within groups. In this respect the coefficient of variation is clearly superior.

A further practical advantage of the coefficient of variation is that owing to its greater mathematical simplicity more is known about its sampling distribution than about that of the relative mean deviation or the Gini ratio.[8] It must be admitted, though, that not enough is known as yet to be of much help in the study of the typically skew income distributions.

Where tests of significance are important, I would suggest that the best measure of inequality may be the standard deviation of the logarithms of income, since these may be assumed to be normally, or at least symmetrically distributed, without excessive lack of realism.

The one practical advantage that the relative mean deviation has over the other measures is that it is easier to compute. Its computation is, as a matter of fact, even easier than the method described by Mr. Schutz. Referring to his Table I (p. 109), for example, he derives column (11) by taking column (10), which is column (8) divided by column (4), subtracting unity, and multiplying the remainder by column (4). The index is then the sum of the absolute values of the entries in column (11) (p. 111). One can obtain column (11) more simply by subtracting column (4) from column (8). In these days of automatic computing machines, however, the difference in this respect between the relative mean deviation and the coefficient of variation, is very small.

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[7] $V^2 = \frac{1}{n \cdot \bar{x}^2} \sum_{j=1}^{N} \sum_{i=1}^{n_j} (x_{ij} - \bar{x})^2$, where x_{ij} is the ith income on the ith group

$$= \frac{1}{n\bar{x}^2} \sum_j \sum_i (x_{ij} - \bar{x}_j)^2 + \frac{1}{n\bar{x}^2} \sum n_j (\bar{x}_j - \bar{x})^2$$

$$= \frac{1}{n\bar{x}^2} \sum_j n_j \cdot \bar{x}_j^2 \left[\frac{1}{n_j \bar{x}_j^2} \sum_i (x_{ij} - \bar{x}_j)^2 \right] + \frac{1}{n\bar{x}^2} \sum n_j (\bar{x}_j - \bar{x})^2$$

$$= \frac{1}{n\bar{x}^2} \sum_j n_j \bar{x}_j^2 v_j^2 + u^2.$$

[8] A formula for the standard error of the coefficient of variation is given in M. G. Kendall, *The Advanced Theory of Statistics*, 2nd ed. (London, 1945), Vol. 1, p. 209.

The sampling distribution of the coefficient of variation from a normally distributed variate is derived by W. A. Hendricks and K. W. Robey in "The Sampling Distribution of the Coefficient of Variation," *Annals of Mathematical Statistics*, Vol. 7, p. 129, and plotted for the case $n = 2$.

No corresponding information is available for the relative mean deviation and the Gini ratio, though the standard error of the *absolute* mean deviation is known for the normal population and that of Gini's *mean difference* has been worked out for the normal, exponential, and rectangular parent distributions (Kendall, *op. cit.*, Vol. 1, pp. 215-17).

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Some Balance of Payments Pitfalls: Comment

I share with Mr. Stephen Enke the opinion expressed in his communication "Some Balance of Payments Pitfalls"[1] that the terms receipts and payments, as used in balance of payments presentations, may be somewhat misleading. As may be seen from an examination of our articles in the *Survey of Current Business,* we dropped the terms receipts and payments beginning with the figures presented in the issue of June, 1950.

The terms receipts and payments may, however, not be so confusing as Mr. Enke seems to suggest. It is true that a credit entry is made for any transaction which results, or would ordinarily be assumed to result, in a claim on foreign countries, or a reduction of foreign claims on the exporting country. However, except in the case of gifts in kind, an offsetting debit will appear, usually in one of the capital accounts, and this debit can be considered to represent the "payment" for the export. This Mr. Enke concedes in the paragraph on the top of page 163. This being the case, where does the confusion arise? True, it might be more accurate to label the items "transactions giving rise to receipts" instead of just "receipts," as in ordinary bookkeeping sales are usually referred to as receipts. In both cases it might be argued that the real receipt is the increase in an asset (*e.g.,* cash), which, of course, is by itself a debit entry.

The foregoing notwithstanding, I too prefer the use of the terms debits and credits, although we customarily explain their use in terms of the rule given in an elementary accounting text. This rule is simply to debit increases in assets and decreases in liabilities and to credit decreases in assets and increases in liabilities.

With the exception of the unilateral transfers (gifts) and, possibly, income on investments, all of the entries in the balance of payments record the reduction or increase of an asset or liability. Exports of merchandise and services are credits because they represent a transfer of assets from the reporting country to foreigners. Similarly, an increase in a United States investment abroad is represented by a debit entry because it is an increase in assets of this country. A reduction of foreign investments in the reporting country is a debit because it is a reduction of the country's international liabilities. Of course, it must be kept in mind that (except for the nonmonetary gold entry) only transactions with foreigners are to be recorded in the statement.

For example, if wheat is exported against payment from a foreign dollar account in New York, the reduction in an *asset* (wheat) is recorded by a credit entry and the offsetting reduction in a *liability* is a debit. If a foreign currency or bill of exchange had been accepted in payment, the second entry would still be a debit, of course, but because it reflected an increase in an asset—a claim on foreigners.

It seems to me that this is a much simpler explanation of the debits and credits than the discussion of *claims* by Mr. Enke. Actually, in these days all business transactions are settled in claims of one sort or another. If an American exporter receives "payment" for his export either in the form of a balance in a foreign bank or a bill of exchange on the foreign importer, he has,

[1] *American Economic Review,* Vol. XLI, No. 1 (Mar., 1951), pp. 161-64.

in effect, received payment in the form of a claim on the foreign country, either on the exporter or on a foreign bank. I can see no particular reason for considering the bill of exchange as a claim and the bank deposit as an actual payment. Similarly, if the exporter actually gets paid in dollars, these dollars must have been provided out of a balance in the United States already owned by somebody in the importer's country or by dollars purchased against a credit (probably to an American bank) in the importer's country. In either case the exporter has been paid by a change in claims; either foreign claims on the United States have been reduced or United States claims on the foreign country have been increased—a debit entry in either case.

Mr. Enke is quite right in pointing out the difficulties in drawing inferences regarding exchange rate pressures from the balance of payments statistics alone; these can only mirror what has happened in the past, when it is already too late to do anything about it. It is like trying to measure the inflationary or deflationary "gap" in the internal economy by looking at last year's product and income statistics. By the time the transactions have occurred, the gap has been closed, or the specific problem solved in one fashion or another. Reference might be had on this subject to the International Monetary Fund's concept of compensatory official financing.[2]

In the last paragraph of his note Mr. Enke states that a nation's balance of payments is not analogous to any familiar accounting statement. It seems to us that there is a direct analogy between the balance of payments and a statement of "source and disposition of funds." The latter, like the balance of payments, may include transactions which were not actually settled in cash such as when net profit is shown as a source of funds and an increase in accounts receivable as a disposition of funds. The profit concept is, of course, foreign to balance of payments terminology; funds are "provided" to a country through reductions in its assets or increases in its liabilities (credits) and are used, or disposed of, to increase its assets or to reduce its liabilities (debits).

Finally, one "pitfall" mentioned seems a little less than real. Certainly it is unlikely that any student of economics would be apt to consider "that the aggregate saving-investment of a national economy" can "be inferred from the state of its (international) Current Account alone."

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[2] International Monetary Fund, *Balance of Payments Yearbook, 1938-1946-1947*, pp. 4-24.

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The Effect of Foreign Investment on the Balance of Payments: Comment

In the December, 1950 issue of the *American Economic Review*, Professor Evsey D. Domar[1] analyzes anew, with mathematical tools, the old problem of the effects of a country's foreign investment program on the eventual pattern of its balance of payments on current account. The problem in question involves the well-known fact that while a foreign investment program (in its

[1] "The Effect of Foreign Investments on the Balance of Payments," pp. 805-26.

early stages at least) makes possible an export surplus on current account which in turn supports domestic employment, growing amortization, dividend, and interest receipts from the foreign loans will eventually necessitate an import surplus, presumably accompanied by depressed employment, unless the rate of foreign investment expands indefinitely.

Professor Domar's model offers an elegant reformulation of this process in terms of an inflow-outflow ratio which reads, at the limit[2]

$$\frac{\text{amortization rate} + \text{interest rate}}{\text{amortization rate} + \text{rate of growth.}}$$

The "amortization rate" of this ratio is computed as a constant fraction of the net debt still outstanding and the "rate of growth" indicates the percentage growth of new investment. Professor Domar points out that with the rate of growth of new investment in the denominator, ". . . it follows that the faster new investment grows the smaller will be the ratio between the inflow and the outflow of funds. . . . *Whether or not an import balance* (*i.e.*, an excess of inflow of funds over the outflow) *will at all appear depends on the relative magnitudes of the growth and of the interest rate.*"[3] At the limit, then, a rate of growth larger than the interest rate[4] will produce a result below 1 and an import balance need not arise. Should the interest rate rise above the rate of growth, however, an import balance ". . . will become inevitable, its timing depending on the magnitudes of the three variables involved."

Professor Domar further explores the problem by introducing the more usual amortization techniques (such as repayment by equal doses, or repayment by equal doses of amortization and interest combined) which, however, lead to the same general conclusions by way of a more complex set of equations. The study of the several amortization methods, moreover, uncovers a neat technique which may be used to postpone or decrease a payments surplus (or deficit) to a certain extent.

This new model of the foreign investment inflow-outflow relation should give students of international economics a better insight into the dynamics of foreign lending for which all owe him thanks. Although the model is formally correct,[5] the recommendations the author places thereon seem to depend on assumptions as to the actual values of the yields of our foreign investments which seem more fortuitous than real. This note, therefore, will be devoted to a study of the relevant rates of return (the "interest rate") and their effect on the policy suggestion made by Professor Domar that the investment of a constant fraction of our growing GNP would suffice to prevent the occurrence of an import surplus as long as national income grows at a faster rate than the size of the yield of our foreign investments.[6] It is this contention which appears unwarranted after a consideration of the actual facts.

[2] *Ibid.*, p. 807.

[3] *Ibid.*, p. 808.

[4] The "interest rate" referred to represents the yield of all foreign investments, direct or portfolio.

[5] There seems to be a mislabeling error, however, in Chart 2 where curves 3 and 4 seem to have the wrong amortization rates (see *ibid.*, p. 819).

[6] The argument presented here will abstract from the enormous difficulty of finding the geometrically rising supply of investment funds needed to fulfill this condition. Whether the required flood for foreign investment capital could be intelligently, usefully and profitably

Professor Domar's basic proposition is that an import surplus need not arise if our annual gross capital outflow were to grow at the same (or a higher) rate than the yield of our foreign investments. If this required rate of increase of capital outflows were to be (at least) equal to the annual rate of growth of GNP, the investment of a constant portion of GNP as advocated by Professor Domar will effectively prevent the advent of an import surplus. The question now becomes: will the average annual rise of GNP in fact be as large as the *ex post*[6a] interest rate on foreign investment so that investing abroad a constant proportion of GNP will suffice to maintain an export surplus? Professor Domar admits that a realistic rate of growth for GNP would not exceed 3 per cent. The average rate of return on our foreign investment (private and public) would, therefore, need to be 3 per cent or less. But since 1919, the lowest annual return[7] on our cumulated foreign investments has been 3.8 per cent (in 1945) and the lowest rate of return during the interwar period[8] was 4.1 per cent (in 1935). In the postwar period, the rate of return on our total foreign investments (public and private) rose to 4.2 per cent in 1948[9] and fell off slightly to 4.1 per cent in 1949. One can only conclude that, in the absence of a sharp reduction in rates of return on future investments, the average yield on our foreign investment stock can hardly be brought down to the percentage rate of growth of our GNP. In consequence, the investment abroad of a constant fraction of GNP would probably be insufficient to prevent the advent of an import surplus.

Professor Domar seems to have his own doubts, and suggests that a low interest rate (2 per cent) on future United States government loans to foreign countries be used so as to bring down the average total yield on foreign investments. In 1949, however, the actual interest receipts ($98 million) on aggregate outstanding government loans ($13,200 million) gave an average rate of return on public lending of 0.7 per cent, while private investments yielded a return of 6.5 per cent.[10] If we assume a future average yield of 6 per

invested abroad apparently presents an even more difficult problem than finding the money: The experience of the International Bank for Reconstruction and Development, for instance, seems to have been that well conceived and integrated development plans were scarcer than investment funds.

[6a] The "interest rate" is put on an *ex post* basis because the eventuality of defaults is specifically noted as a mitigant of the transfer problem.

[7] These rates of return are based on Department of Commerce estimates of the value of foreign investments divided by the foreign investment income actually transferred. As this procedure accounts for reinvested earnings only in the value side of the yield ratio, the potential yield of direct private investment will be understated to a considerable extent, especially during prosperous years. Portfolio investment value, too, seems to have been overestimated.

[8] Data are not available for every year, but the depression years of 1930, 1931, and 1935 should give a fair enough picture; during these years foreign investments yielded 6.8, 5.2, and 4.1 per cent, respectively.

[9] OEEC, *Draft Report by the Economic Committee on International Investment* (Paris, 1950), Statistical Appendix, Table 2. Rate of return computed on long-term investment only.

[10] Incidentally, the estimated stock of private portfolio investment is probably overvalued because it represents a catch-all for items like foreign real estate and other miscellaneous assets abroad which rarely *transfer* any earnings. This, of course, again understates potential private rates of return.

cent on private foreign investment, the stock of government investment (to be lent at 2 per cent) would have to be about three times the size of private investment so as to bring about an average yield of 3 per cent. Can we expect public investment, now aggregating $13.2 billion, to grow to about $57.6 billion[11] or larger if private investment continues to grow—especially since each $1 billion of private investment will require another $3 billion of government investment to keep total yields at 3 per cent? It seems inconceivable to hope that we can invest $44 billion (net) quickly enough so that the composite rate of interest will fall below the rate of increase of GNP. As the interest rate will remain higher than the probable rate of increase of GNP throughout the process, the scheme may well remain unfinished because the melancholy event it was to prevent intervened before completion.

If we cannot, therefore, ensure a continued export surplus through a sufficiently rapid rise in foreign investment, can we postpone the arrival of an import surplus and thereby gain time for making the required domestic adjustments? Professor Domar found that by a judicious manipulation of amortization rates this can be done. He discovered that the backflows of two loans with the same interest rates (6 per cent), growing at equal rates of increase (2 per cent), but which are amortized at rates of 10 and 5 per cent, respectively, will behave in a very different manner. The 10 per cent loan will reach the import surplus state about three years before the other; seven years afterwards, however, the import surplus generated by the 5 per cent loan will have reached parity with the other and produce a higher import surplus thereafter until paid off. An intelligent and effective amortization policy, therefore, can postpone the advent of an import surplus to the extent that our foreign investments are loans which are amortized. But only about two-thirds of our total present investment stock have any kind of amortization schedule at all, and direct investments, which need never be amortized, seem to be the most rapidly growing sector of our investments abroad.[12] It follows then, that the best amortization policy can only have a partial influence in postponing the arrival of an import surplus, but the effectiveness of this scheme may be seriously hindered by the irregularity of direct investment profit transfers which may sometimes swell, sometimes depress, investment service receipts. On balance, therefore, the effect of scheduled amortization schemes will be quite small until a very sizable amount of our foreign investment is so organized.

Finally, Professor Domar's formulation abstracts from grants. This seems to be a considerable simplification since we could, of course, decide to give away enough export commodities so that any "import surplus" implied by excess service receipts over current capital outflows need never occur. Should our present grant policy ever stop, however, an import surplus of goods and services will tend to eventuate unless we accept a policy of massive foreign investments. But the prevention of an import surplus by a growing investment

[11] The increase in public investment stock would be $44.4 billion, assuming no further private investment. This rise of stock would have to be net of repayments, thus probably implying a larger gross outflow of funds.

[12] Strictly speaking, we can only manipulate the amortization schedules of new investments, for renegotiations of old amortization schedules might disrupt the usual institutional procedures.

scheme would probably require a growing share of our GNP: a constant share invested abroad could probably do no better than to postpone temporarily an ever-increasing import surplus. If our balance of goods and services does not or cannot turn passive, defaults will ensue when the gold and other acceptable means of international payments of the debtor countries are exhausted. As we cannot easily base a policy for tomorrow on a set of expectations involving the loss by default of the foreign investment we are encouraging today, the eventuality of a United States import surplus may have to be accepted.

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Praxeology: Reply to Mr. Schuller

Rather than prolong my discussion with Mr. Schuller[1] unnecessarily by engaging further in a point-by-point refutation, I think it important to clarify the nature of praxeology and its applicability to historical events.

The fundamental praxeological axiom is that individual human beings *act*. Praxeology reveals the implications of the concept of "action." Action results from the fact that the individual "actor" believes that there are other states of being preferable to the one in which he is at present, *and* from his belief that he may take certain steps which will bring him to a more satisfactory state. Given these preferences and "technological" ideas, the individual acts upon them in order to arrive at a more satisfactory state. The preferred state which the actor expects to attain is his "end"; the steps by which the actor attempts to attain his goal are the "means."[2] It is this praxeological concept of action that distinguishes the observed movements of men from those of inorganic matter.[3]

This axiom of action is indisputably an important truth, and must form the basis for social theory. To deny it would be absurdity. How has our knowledge of the truth of this axiom been attained? In this way: an individual reflects, discovers the concept of action and its applicability to all human individuals, analyzes its components, and then sets it forth orally or by the written word. Each individual, upon reflecting on the axiom of action, must agree to its truth and to its importance. It is in this respect that the action axiom must be "universally recognized as true."[4] What name we apply to this method of obtaining knowledge is basically unimportant and involves

[1] *American Economic Review*, Vol. XL, No. 3 (June, 1950), pp. 418-22; Vol. XLI, No. 1 (Mar., 1951), pp. 181-90.

[2] Although he did not use the term, Professor Talcott Parsons engaged in profound praxeological analysis in his *Structure of Social Action* (Glencoe, Ill., 1949). *Cf.*, especially, Chapter II, pp. 44-50.

[3] The difficult case of animal behavior, ranging from the lower organisms to the higher primates, cannot be discussed here.

[4] Schuller's questioning of the validity of the praxeological axioms and procedures on the basis of the possible inability of the vast majority to grasp them is an old problem for the physical sciences. How can Einstein's theory of relativity be true if the mass of the people cannot understand the demonstration of its validity? Whatever solution physical science has developed for this puzzle may be adopted by praxeology as well.

irrelevant philosophical problems; thus, it may be called "introspective," "empirical," "a priori," or "reflective." The important consideration is that it is certainly a different type of "empiricism" from the study of historical events and is definitely "a priori" to those events, and that such a situation has no parallel in the physical sciences. The physical sciences are not in the fortunate position of positively knowing their fundamental axioms. On the other hand, the physical sciences are in a position to isolate causal factors in experiments. The physical sciences, then, have to arrive at their axioms by hypothesis and by experimental testing of conclusions deduced from these hypothecated axioms. In the "social sciences," the fundamental axioms of praxeology are known from the beginning, so that substantive conclusions may be drawn by means of logical deduction. In human historical events, however, causal factors cannot be experimentally isolated, so that the historian must explain by the use of judgment which praxeological laws apply in the particular situation.

Explanation of the rôles of praxeological laws and historical judgment or "understanding" may be provided by the following example: *If* the supply of a medium of exchange increases; *and if* the demand for that medium remains the same; *then,* the purchasing power of that medium will decline. This is a praxeological law. How may an historian apply this law? He must first determine whether or not a decline in purchasing power (increase in prices) has taken place. This involves difficulties of an historical-statistical nature; it is not a problem for praxeology or for that elaborated division of it known as "economic theory" or "catallactics." Once he has determined that a fall in purchasing power of the medium has taken place, he searches for an explanation by applying the praxeological-catallactic law. He investigates the historical situation to discover whether there has been an increase in the supply of the medium. If he finds a considerable increase in the supply, he is then in a position to assert three truths:

A. It is an historical fact that the purchasing power of medium X has declined to such and such an extent.

B. It is an historical fact that the supply of the medium X has increased to such and such an extent.

C. The praxeological law just mentioned. It is therefore concluded: that a significant cause of the decline, A, was the increase in supply, B.

If he finds no increase in supply, then he deduces that a fall in demand for the medium was the cause of the fall in purchasing power.

Such is an example of what is involved in the work of historical explanation. The work of the "economic theorist," or praxeologist, is to elaborate the laws (such as C) from the various axioms and according to the rules of logic. Clearly, neither Mises nor myself has ever cited "facts as if they provided support for his conclusions and for the axioms, postulates, and logical procedures." I cited facts such as "dollar gaps" not as proof or test, but as *illustrations* of the workings of praxeological laws in (modern) historical situations. It is a praxeological law that if the government (or any other agency exercising the power of violence) intervenes in the market to establish a valuation of any commodity below what would be the market valuation, a shortage of the commodity develops. Gresham's Law is a subdivision of this

law applied to media of exchange, which, in turn, leads to the explanation of the "dollar gap." The historian sees a shortage of dollars in relation to pounds develop in England, and, using praxeological laws, explains it as the consequence of governmental over-valuation of the pound in relation to the dollar. In no way does he test or "prove" the theory.

How may praxeology be applied to forecasting, to the prediction of future historical events? The process is essentially that of the historian, except that the difficulties are greater. Thus, using the above example, the forecaster may see a considerable increase in the money supply take place. He asserts B; C he knows as a praxeological truth. In order to forecast the probable future course of purchasing power, he must make an estimate of the probable course of the demand for money in the period under consideration. If, on the basis of his judgment, he decides that the relative change in demand will be negligible, he is in a position to predict that the purchasing power of the money unit will decline in that period. With the help of praxeology, his judgment is the best he can offer, but it is still inexact, dependent on the correctness of his estimates—in this case, of the movement in the demand for money. If he wishes to make a quantitative estimate of the change in purchasing power, his estimate is still more inexact, for praxeology can be of no help in *this* attempt. If his prediction proves erroneous, it is not praxeology that has failed, but his judgment of the future behavior of the elements in the praxeological theorem. Praxeology is indispensable, but it does not provide omniscience. It furnishes laws in the form of: If X, and if Y remains unchanged, then Z. It is up to the historian, and his counterpart, the forecaster, to determine the specific cases in which the law is applicable. It should now be quite clear that there are no praxeological laws of historical development, and that neither Mises nor myself need "reconcile" any "dilemmas" in setting forth such a law. If there were, then the task of the historian would be far easier than it is. Historical events are complex results of numerous causal factors: praxeologic, psychologic, physical, chemical, biological, etc. The historian must determine which science and its laws apply, and, more difficult, the extent to which each causal factor operated in the events he is attempting to explain or predict. Historians will legitimately differ on the order of importance to be attributed to each factor. Thus, various factors, praxeologic-economic, military, moral, and psychologic might be enumerated as causes of the Bolshevik Revolution. But there is no exact, scientific way of deciding the precise extent of importance to be assigned to each factor.

What of the relation between praxeology and economic theory *per se?* Economic theory as has been developed is a component part of praxeology. It is deduced from the apodictic axiom of action, and most of economic theory, including the laws and implications of Uncertainty, Time Preference, the Law of Returns, the Law of Utility, etc. can be deduced directly with no further assumptions. With the help of a very small number of subsidiary axioms which are rather more "empirical" in nature—such as "the disutility of labor"—the rest of economic theory can be deduced.

The categories of praxeology may be outlined as follows:

Praxeology—the general, formal theory of human action:

A. The Theory of the Isolated Individual (Crusoe Economics)

B. The Theory of Voluntary Interpersonal Exchange (Catallactics, or the Economics of the Market)
  1. Barter
  2. With Medium of Exchange
    a. On the Unhampered Market
    b. Effects of Violent Intervention with the Market
    c. Effects of Violent Abolition of the Market (Socialism)

C. The Theory of War—Hostile Action

D. The Theory of Games (*e.g.*, Von Neumann and Morgenstern)

E. Unknown

Clearly, A and B—Economics—is the only fully elaborated part of praxeology. The others are largely unexplored areas.

A concluding word on all the pother about democracy, dictatorship, and government. Clearly, the praxeologist *qua* praxeologist cannot *advocate* any course of action. As a citizen, however, he may, along with other citizens, try to decide on the proper course of social policy, and, in making that decision, he will be likely to use the aid of praxeology and call attention to its usefulness. For socio-political problems, praxeology presents the citizen with one great lesson, *i.e.*, that the use of violence for purposes of plunder injures *not only* the victim (which is self-evident) but, in the *long run*, the plunderer also. The goal of the good citizen, then, is to try to eliminate, or at least minimize, violent plunder in the society.[5] The problem of how to arrive at this goal is still unsolved, as a glance at the state of the world today will make dramatically clear. The great problem is how to convince or persuade the would-be plunderer to consult his long-run rather than what he might interpret as his short-run interests. The traditional *laissez-faire* solution was to establish a government that would have an effective monopoly on the means of violence, and would use these means solely to prevent and punish attempts at violence within the society. This largely (although not completely) ended the problem of sporadic social violence, but created a new problem: *quis custodes custodiet?* Who will guard the state itself from using its effective monopoly of violence for plunder? The most ambitious attempt to solve this problem was the "Jeffersonian" one—to establish a government that would be tightly and securely ringed with definite constitutional restrictions to confine it to its "anti-invasive" function, to instill into the people a spirit of perpetual vigilant distrust of the government and particularly the appointed bureaucracy, and to keep the government small and local in order to permit direct popular control and vigilance. In the light of the history of the past century, it is possible that this method is impracticable, and that some other means may have to be found.

Finally, may I state that though I share Schuller's hope that my interpretation of *Human Action* agrees with that of Mises, there is no warrant for any assumption to that effect.

MURRAY N. ROTHBARD*

[5] This is aside from any *moral* considerations which might also lead the citizen to the goal of eliminating or minimizing the use of violence.

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BOOK REVIEWS

Economic Theory; General Economics

Economic Ideas—A Study of Historical Perspectives. By FERDINAND ZWEIG. (New York: Prentice-Hall. 1950. Pp. 197. $2.25.)

The Concept of Ethics in the History of Economics. By JOSEPH F. FLUBACHER. (New York: Vantage Press. 1950. Pp. ix, 460. $5.00.)

"The history of economic thought, like all other history, needs to be rewritten for every generation. . . . Every generation has a deep insight into some epochs and a looser and more detached understanding of others. Every generation is interested in different parts of the immense and infinite wealth of material presented by historical experience and will therefore choose different criteria for the selection of material." With these words Zweig opens his study of economic ideas. In five short essays covering scarcely 190 pages the author interprets the economics of the past in the perspective of the present and speculates about the economics of the future in the light of the trends and experiences of the 20th century. This vast and complex topic is handled with great lucidity and imaginative skill. The first three essays interpret the evolution of economic doctrines from the canonist school and mercantilism to Marxism, neo-classicism and Keynes by relating them not only to the basic economic conditions, policies and interests of their time but also to the assumptions and methodological procedures of the period in which they arose. This broad and sympathetic appraisal of men and ideas within their actual setting shows once more the fundamental validity and realism of the basic conceptions and conclusions of the various schools for their respective periods. These doctrines of the past became obstructive nuisances only when narrow specialists and interpreters continued to cling to and elaborate upon old doctrines after the institutional and economic conditions responsible for the original system of thought had given way to a new and qualitatively different setting. Zweig shows that "the great stimuli to economic thought came from outside, whether from new legal conceptions; or from medicine, physics, mathematics, statistics, psychology, technology, sociology, or from great social reform movements. The enrichment of economic thought has rarely come from the rank and file of professional economists. The so-called professional economist has mainly been a bore, . . . who could carry on for a time the work entrusted to him by the great outsiders, but very soon realized that the soil, unenriched by new fertilizing material, becomes exhausted and sterile" (p. 18).

In discussing the essentially identical methodological procedures of Ricardo and Marx (especially with reference to the labor theory of value and the difficulties resulting from different organic compositions of capital and varying time periods required for the completion of different products), Zweig detects in both what he calls "the principle of one-ness, the cornerstone of Judaism"

and a casuistic displaying of an ideal simplicity which in the case of Marx, "have an air of scholastic or Talmudic tradition." This is a revival of an old shibboleth which I consider unfortunate not only because it seems to continue a certain continental tradition of interpretation of ideas but also because it seems to imply a belief that the search for one basic principle and the imputation of an ideal simplicity into the economic process is something found only within the so-called scholastic and Talmudic traditions. The search for one basic principle (*e.g.*, the labor theory of value) for the interpretation of the processes of production and distribution was borrowed from the natural sciences and can be traced back to Petty's *Political Anatomy of Ireland* and more recently Alfred Marshall was still at work, as Keynes pointed out, trying to synthesize all economic elements into a Copernican system. And indeed, even Keynes himself, in his treatment of the factors determining the level of employment is not free from imputing a high degree of ideal and mechanical simplicity into the complex phenomena of consumption, savings, investment, money and interest. The fact seems to be that all theoretical economics has been until recently in the scholastic or Talmudic tradition differing only in the degree of abstraction, the choice of the variables and basic premises, and the related social philosophies which determine their selection.

In the concluding essays entitled "The Doctrine of Planning" and "The Economists Facing the Future," Zweig reveals himself as a "holistic" economist in the sense in which Gruchy uses the term with reference to the American contribution to modern economic theories. Here the author outlines the structural changes of modern capitalism and provides a perceptive study of the theory, practice and objectives of state-controlled economies in their various forms. He deals at some length with such important questions as the various sectors of modern economies and their essential differences; the "natural selection" of different forms of economic organization in the struggle for survival; the scope, method and content of the economics of the future; the "hypothetical" character and the unresolved problems of Marxist and neo-Marxist socialism; the technique of planning as the necessary counterpart and logical completion of the modern industrial revolution; the need for supplementing the monetary competitive calculus by a calculus in physical units; the theory of social costs and social accounting; the difference between "planning for balance" (full employment) and "planning for targets" (national objectives) and the crucial task of establishing "a planetary political system revolving around a fixed center so that peace and security can be kept." What he has to say about these and numerous other issues is always stimulating and leaves the reader with a sense of the importance and the magnitude of the unfinished business which confronts the present and the next generation of political economists.

Flubacher attempts to show the rôle of ethical and normative elements in the body of economic doctrines and their evolution. Unfortunately he deals with this important subject by providing the reader with an exhausting array of quotations, carried together not only from the original works but also from the secondary literature dealing with the history of economic doctrines. What makes this procedure somewhat less than satisfactory is the fact that

the difficult analytical work required to show the subtle rôle of normative concepts and ethical preconceptions in economic thought is neglected at the expense of listing what economists and historians of economic thought have said about the relation of ethics and economics. This may be less of a disadvantage in the case of those early and recent schools of thought where the connection of ethics and economics is self-evident and, indeed, explicit (*viz.* Plato, Aristotle, early Christianity and medieval economic thought, Physiocrats, Adam Smith, Utopian and Christian socialism, historical school, social protestantism and catholicism). But Flubacher's procedure becomes a definite shortcoming in the treatment of Ricardo, Senior, Cairnes, Menger, Jevons, Pigou, Robbins, Cassel, Davenport, Marx and, indeed, the entire tradition of neo-classical economists with their avowed intention to make economics pure and "positive," *i.e.*, divorced from all normative considerations.

It is true Flubacher seems to suspect ethical predelictions in "many of the leading classical, neo-classical and contemporary British and American economists" and realizes that "hidden biases [may be] lurking beneath the façade of scientific purism." But he does not undertake to analyze these predelictions and biases. As a result he misses the opportunity of showing that the normative character of a system of knowledge may lie precisely in its inadequate comprehensiveness—that is to say, in its dogmatic separation of the economic from the non-economic and in its methodological procedures which induce it to select for special study mostly those aspects of socio-economic reality which lend themselves to treatment and manipulation by quantitative mathematical methods.

As it is, the book may prove useful as a guide to the literature on the subject and as another indication of the persistence of a tradition, from antiquity to contemporary economics, which looks upon all social sciences as inevitably normative-ethical in character and content.

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Cours d'Economie Politique, Volume I. By Jean Marchal. (Paris: Librairie de Medicis. 1950. Pp. 937.)

Those who are familiar with French academic economics will welcome and appreciate Professor Marchal's monumental piece of work. Although not path-breaking, the book is original in its presentation and in the historical perspective that transcends the explanation of the modern economic system.

Volume I is divided into four par , entitled: Birth and Evolution of the Contemporary Economic System, The Basic Elements of Production, The Price Mechanism, Money and Credit.

The approach is historical and institutional with a "humanistic" flavor. Only the price mechanism and the value of money are treated analytically, the first along well-known partial equilibrium lines, the latter with the help of I. Fisher's and the Cambridge formulas.

The historical perspective of the contemporary system is given in the first three hundred pages. Starting from the Middle Ages, the author gives a very interesting account of the successive stages of economic institutional and doc-

trinal development, up to the twentieth century conscious drive towards a "welfare economy."

The author shows much historical and institutional erudition, especially in the chapters on money and banking, which are excellent except for the last one on the theory of the price-level.

While the historical and institutional chapters may be of great benefit to the Anglo-Saxon student, the theoretical ones, namely those on the price mechanism and the price level, will appear less original and inferior to the best English texts.

The author depicts very interestingly the transformation of atomistic into "group" capitalism, and shows the interest-antagonisms in the latter. Discussing the possible solutions to these antagonisms, he rejects "integral planning" and corporatism, and expresses his preference for a "controlled economy," or "liberal interventionism," or "socialism for free men." Unfortunately, unlike A. P. Lerner and others, Professor Marchal fails to give a precise and well-founded "theory of policy," or criteria of proper policy action. He repeatedly insists on the *human* aims of the economic system. But this evokes nothing more than a vague sentimental ideal, which nobody would quarrel with. The author does not seem to possess a coherent "welfare economics" system. He ignores, *i.a.*, Pareto's and his colleague Allais' contributions in this field. On pages 527, 607 and 613, it is suggested that public utilities fix zero-profit prices, which contradicts the well-accepted marginal cost pricing rule.

As a former student and a teacher at the Paris Faculty of Law, Jean Marchal is to be congratulated for the present work. The weaker and less up-to-date parts of it are the analytical ones. Nevertheless on this score progress is made over Law Faculty predecessors.

In spite of its great merits, mainly as a high-standard basic textbook, Professor Marchal's volume has several weak spots. Aside from minor points, the following may disappoint the critical reader: On pages 226-29, mathematical economics are subject to weak criticism. So is the "marginal utility" theory on pages 709-21. On page 614, one finds the following inaccurate sentence: "Competition is a factor of technical progress and is only that."

Very little mention is made and little understanding shown of the French mathematical school, namely of Walras, Colson, Divisia, Roy and Allais. The gap between the two mutually ignoring and "noncompeting" groups is still very wide. Only a drastic academic reorganization would unleash the French creative spirit in economics, and enable it to continue Cournot's and Walras' scientific tradition on a broad front.

Roger Dehem

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Introduction to the Total Theory of Labor: New Positive Foundation of Economics. By Alexander Kokkalis. (Concord, New Hampshire: Evans Printing Co. 1950. Pp. 232. $4.00.)

The author of this privately printed work pursued his graduate studies in the Germany of the Weimar Republic (he holds an advanced degree from the

University of Tuebingen), then returned to Greece for a period of teaching at Salonika and Athens, and has recently come to the United States, where he has continued his researches and writing with the assistance of certain members of the Greek-American community in New York and New England. He hopes that the present relatively short book may become only the introduction to a definitive three-volume treatise which will set forth his philosophy of economic analysis in full detail; and he makes it clear that he regards his system of thought as being both orginal and significant.

In attempting to give, within the painfully inadequate confines of a short review, some description of the foundation-stones underlying this theoretical structure, it seems both permissible and desirable to fall back upon that easily abused device, a series of quotations. In this instance such a method will make it possible to convey the "flavor" or "climate" of the thinking as well as its content. Fortunately, too, the author has taken special pains to provide a condensed statement of the major components of his own thought.

"We have proven," he says, "that there is but one basic economic means, indeed only one means as such, namely LABOR." . . . "For this reason we give to this study the title: THE TOTAL THEORY OF LABOR."

"If labor is the one and only economic means, it follows that the process of production, more generally, the economic process, is nothing else but the process of labor. Labor springs from the intangible realm within man, crystallizes in the tangible external world, and again returns to the intangible, inner world. Capital is thus the channel through which labor energy passes in order to find its expression in consumers' goods. We are therefore not dealing with a production of a material kind which ends in consumption, but with a SPIRAL-LIKE MOTION OF LABOR ENERGY."

"In order to explain the process of production, the economic process, which as we have said before, is but a process of labor, we must first ascertain the elements of production and value. In this regard, we submit proof that there are, everywhere and at all times, only two elements, two factors of production and of value, namely the DIRECTIVE and the EXECUTORY element."

In employing these two terms, the author seems to envisage a relationship similar to that between mind and matter, though he regards both as being aspects or sub-headings of his all-pervasive labor energy.

"All phenomena which occur in the realm of human activities arise then from these two mentioned factors and find their explanation only by means of our exact establishment of the role and function of these factors."

"For these reasons, we have made an especial effort to ascertain once and for all the inner relationship of the above mentioned elements of production and value and we have succeeded in expressing them in clear mathematical formulae. We have proven that there is a MULTIPLE relationship between them, not an additive one. Our entire theory on value and price is based on this multiple relationship of the two value elements."

"The above mentioned fundamental ideas represent the basic foundations on which the structure of economic science, *i.e.* of the Total Theory of Labor, is erected."

After utilizing about 180 pages in the exposition of these basic concepts, the work concludes with a forty-page discussion of various criticisms and appreciations by other writers. More than half of this final section is devoted to the reprint of a long and sharply controversial open letter, penned by the author in 1946 and addressed to a fellow-economist in Greece.

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Economic History; National Economies

Brazil: An Expanding Economy. By GEORGE WYTHE with the assistance of ROYCE A. WRIGHT and HAROLD M. MIDKIFF. (New York: Twentieth Century Fund. 1949. Pp. xix, 412. $3.50.)

The Twentieth Century Fund is to be commended for sponsoring several worthwhile and timely studies designed to assist in the development of "a more enlightened American foreign economic policy." In 1947 the Fund published a provocative study on the postwar rôle of the United States in foreign trade and investment.[1] That volume, which emphasizes analysis, interpretation and policy, has been followed by reports on Brazil, Costa Rica and Turkey[2]—countries whose economic, political and social conditions the Fund considers to be of special interest to the United States.

The purpose of the volume under review is to "stimulate the use of American capital and skills in Brazil, not only for the advantage of the United States, but also—and most especially—to increase the standard of living and well-being of the people of Brazil" (p. ix). After two introductory chapters on the economy, geography, government and people of Brazil, successive chapters treat of income and employment, products of the land, problems of food, mining and power, manufacturing industries, transportation and communication, social conditions, public finance, banking and investment, international trade and exchange, and the economic future.

The volume, which is encyclopedic in scope, is primarily factual, descriptive and historical. The senior author has demonstrated his proficiency in this type of writing and the quality of the present volume equals his previous efforts.[3] While much of the basic descriptive materials and factual data may be found elsewhere,[4] there is real merit in having such materials and

[1] Norman S. Buchanan and Frederich A. Lutz, *Rebuilding the World Economy: America's Role in Foreign Trade and Investment* (New York, Twentieth Century Fund, 1947).

[2] Max Thornburgh with Graham Spry, *Turkey: An Economic Appraisal* (New York, Twentieth Century Fund, 1949). Stacy May, Director, with Just Faaland, Albert R. Koch, Howard L. Parsons and Clarence Senior, *Costa Rica: A Study in Economic Development* (New York, Twentieth Century Fund, 1951).

[3] See, for example, George Wythe, *Industry in Latin America*, 2nd ed. (New York, Columbia University Press, 1949).

[4] See, for example, United States Tariff Commission: *Agriculture, Pastoral, and Forest Industries in Brazil* (1946); *Economic Controls and Commercial Policy in Brazil* (1948); and *Mining and Manufacturing Industries in Brazil* (1949).

data summarized and integrated in a balanced volume. The inclusion of a selected bibliography would have been helpful.

In a number of instances the authors draw attention to similarities between Brazil and the United States. Unfortunately, some of these are superficial; furthermore, many real differences are not mentioned or explained. For example, the authors state that the first constitution (adopted in 1891) and form of government of Brazil were inspired by and modeled in many ways after those of the United States (pp. 4 and 33). There is, however, no discussion as to the reasons such institutions in Brazil were overthrown in 1930 and a dictatorship established which remained in power during the succeeding sixteen years. An explanation of the fact that similar institutions maintained their strength in the United States while they were abolished in Brazil would be significant and development programs based on such findings would help in the solution of Brazil's problems. Further, the authors state, "Brazil found inspiration in the United States . . . in establishing its legal system" (p. 4). If this statement is intended to imply that the legal systems of the two countries are alike, it is incorrect except for minor and superficial similarities. The legal system of Brazil is based upon civil law while that of the United States is based primarily upon common law.

Whatever the reasons for the omission of basic analysis and policy formulation (p. x), the value of the volume is lessened thereby—particularly in light of the stated objective. In substantial part this gap has been filled by the study of the Joint Technical Commission.[5] The Commission analyzed the economic, financial and other factors of Brazil which tend to promote or retard economic growth and recommended policies and programs designed to aid in the development of a balanced economy. Careful analysis and understanding recommendations are made with respect to financing economic development programs from domestic and foreign sources and the need for cooperation between private interests and the government.

The two volumes are complementary; together they satisfy the basic needs of the intelligent layman, student and policy maker.

DONALD SHAM

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[5] Department of State, *Report of the Joint Brazil-United States Technical Commission* (1949). The Commission was created in 1948 pursuant to the request of Brazil for the assistance of technicians of the United States government to collaborate with the technicians of the Brazilian government.

Statistics and Econometrics

The Role of Measurement in Economics. The Newmarch Lectures at University College, London, 1948-1949. By RICHARD STONE. (Cambridge: The University Press. New York: Cambridge Univ. Press. 1951. Pp. 85. $2.50.)

This volume, small in size but not in scope or interest, offers the economist a look into each of several areas where measurement is indispensable to good economics. These areas range from the axiomatics of utility theory,

through difference equations, social accounting, and the theory and practice of empirical searches for demand curves, to some intelligent remarks on the collection of statistical data and the use of empirical economic knowledge. Thus the book will be able to widen the horizons of nonquantitative theoretical economists and nontheoretical quantitative economists alike. It will also furnish good fodder for the foraging student.

In a short first part (eight pages), Stone quickly introduces economic models, the use of random variables, and the idea of a more or less persistent economic structure that undergoes occasional irregular changes.

The second part discusses what he calls the four types of economic questions that must be answered in obtaining and applying economic knowledge: (1) Questions of fact, including the defining of concepts to be used in empirical work. (2) Questions of the truth or falsity of an hypothesis, which he illustrates by the axiomatic presentation of the theory of consumer choice together with certain logical consequences which if contradicted by reality would disprove the theory. (3) Questions of the estimation of parameters, including an intelligible discussion of economic structural equations—definitional, behavioristic, technological, statutory, and institutional; of the identification problem; and of the advantage of dealing with the more persistent structural equations instead of the less persistent derived or reduced form equations. (4) Questions of prediction, which he discusses in terms of linear second-order difference equations worked out in great detail to show the behavior of simple aggregative systems when left alone or when modified by public policy aimed at a constant national income. One purpose of these simple systems, says Stone, is "to show the logical elements involved in a very simple case, elements which must be supplied by intuition or in some other way if they are not supplied by econometric studies" (p. 35). Chief among these elements are the reactions of the free parts of the economy to possible alternative policy measures.

In the third part, Stone gives two examples of the use of measurement, taken from his own published work: social accounting, and the estimation of linear demand equations for certain commodity groups in the United Kingdom and the United States. For the American data, Stone estimates *several different* plausible demand equations for each commodity group. It is almost necessary to do this, because economic theory alone is not powerful enough to tell just what variables will be the important ones in any particular case, though it can provide a list from which the choice should be made. A caution here: if *enough* equations are estimated from the same set of data, eventually some can be found that fit almost perfectly; but a persisting relation such as we seek is not likely to fit perfectly in any given period, and, accordingly, the almost perfect fit in one period is likely to be very far off in other periods, because it partakes too much of the accidental characteristics of the period it was fitted to. For this reason, an equation that looks good compared with others fitted to the same data must be regarded skeptically until it has been tried with different (usually subsequent) data.

Stone's presentation is usually general in nature, but he brings up some quite technical points. For example, he mentions (pp. 75-76) that Cochrane

and Orcutt[1] found in sampling experiments that Hart and von Neumann's[2] test understates the amount of serial correlation of the random disturbances to an equation. It should be added that this is not due to any error of Hart or von Neumann; it is because their test was designed for *observable* random variables, whereas the true disturbances to an equation can never be observed, but can only be approximately *calculated* on the basis of observed variables and estimated parameters.

In contrast to the technical nature of the previous point, Stone does not even say in this book what estimation method he used (least squares) and why he used it (instead, he refers the reader to other work of his). In view of the current controversy over what estimation method should be used for equations that belong to a system of simultaneous equations, and in view of the fact that he does discuss a technical aspect of the serial correlation test, this seems to be an unwarranted omission.

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[1] "Application of Least Squares Regression to Relationships Containing Autocorrelated Error Terms," *Jour. Am. Statistical Assoc.*, Vol. XLIV, No. 245 (Mar., 1949), p. 45.

[2] "Tabulation of the Probabilities for the Ratio of the Mean Square Successive Difference to the Variance," *Annals of Mathematical Statistics*, Vol. XIII (1942), pp. 207-14.

Economic Systems; Planning and Reform; Cooperation

Capitalism. By DAVID McCORD WRIGHT. (New York: McGraw-Hill. 1951. Pp. xvii, 246. $3.25.)

One of the dominant myths of the time is that all the ills to which the flesh is heir are uniquely determined by the cultural environment, usually specified as capitalism. From this it follows that some single sweeping change in economic organization will bring peace, prosperity and a race of angels in its train. From Rousseau onwards collectivists of every description have been propagating this idea, and today acceptance of it threatens to become a token of intellectual competence.

One consequence of this dogma involves the comparative appraisal of capitalism and its rivals. Properly so, capitalism is conventionally portrayed with facts—though there is a marked preference for sordid ones—drawn from the actual experience of capitalist societies. All evils, problems and injustices concurrent with the capitalist era are identified with capitalism as a form of economic organization, in a one-to-one correspondence. In contrast, collectivist alternatives have usually been presented as ideal conceptual schemes that combine in utopian fashion a perfect system of abstract justice, complete security for everyone, and an even more rapid advance in total output than capitalism has actually achieved. One has only to read, for example, Engels' *Herr Eugen Dühring's Revolution in Science* and Lenin's *State and Revolution* to grasp this utopian ideology in its fullest expression.

Professor Wright is a foe of this secularized perfectionism. He believes that the choice between capitalism and its rivals—as it is usually presented—is

a dangerously deceptive one because of the delusory utopian character of the collectivist option. Capitalism, he readily admits, does have faults, though some are curable within the system and most of them are not adequately analyzed with existing theory. Also, there *are* alternatives to capitalism, particularly if we desire to go over to a stationary circular-flow system. Accordingly, he attempts in this book to re-examine the major problems attributable to capitalism and to restate the terms of choice between capitalism and its alternatives. In essence he argues: (1) a society free of conflict and some coercion is impossible, whatever the form of its organization; (2) the real choice lies between two clusters of values, incapable of combination in one social system; and (3) capitalism gives rise to peculiar problems of stability, distribution and monopoly, but use of the tools of Marxian or equilibrium theory mainly yields solutions that are inadequate and misleading.

Any social system must provide methods for the selection of rulers, the arbitration of disputes, the enforcement of decisions, the allocation of economic resources and the organization of production. Yet the Marxists, in their ultimate vision, promise a society free of conflict and compulsion. All we need do, runs the argument, is to turn over all power to the planners and abolish private property, and the administration of things will supplant the coercion of men. "Spontaneously and voluntarily from native intelligence and sheer love for humanity everyone will see what ought to be done and do it—or see who the right man is to do the job and let him do it or voluntarily submit to his direction . . ." (p. 5).

This millennium rests upon two contentions, often uncritically made to depend upon each other: that private property is the root cause of conflict, and that planning will achieve abundance and make conflict unnecessary. In contrast, Wright holds that conflicts mainly derive from the insecurity produced by growth and change, from which emerge pressure groups and resistance to change. Thus people may be egotists about other things than money: a hard-won skill, a particular neighborhood, the authority conferred by a particular job. Economic change disrupts these customary expectations, and can lead to pressures and conflicts, even under planning. If socialism is to favor growth, these conflicts follow. If it is to be stationary, there will still be a struggle for power, for not everyone can be a commissar. And either way, even the most selfless idealists can disagree concerning ways and means. Thus abundance of goods does not mean the end of conflict, or need for arbitration and coercion. But abundance is unlikely anyway, because wants will rise with the standard of life and population may continue to increase.

In the comparison of social systems, we really are faced with a choice between basic sets of values. If we want growth and change, we require a chance for new men to rise on independent terms, free to change existing ways of doing things. Wright believes a decentralized competitive capitalism, fortified by free institutions and reasonably stabilized but not too much, is best calculated to foster the creative individualism essential to spontaneity and growth. This is the surest route to "broad opportunity, rising living standards, tolerance, democracy, independence, change and activity . . ." (p. 223). If instead we prefer complete stability and a serene, contemplative

existence in an orderly and tightly organized society with a fixed standard of living, then "socialism" or some type of centralized planning is the logical alternative. And then most, if not all, the preceding values will have to be sacrificed. But if we want the values fostered by capitalism *and* the perfect security of a routinized economy, we cannot have them both together, for the incentives, ideologies, controls and conditions required for each are mutually exclusive.

Having so cleared the decks, Wright proceeds to an examination of what he considers the problems of capitalism.

The first problem, that of distribution, must start with the recognition that growth is capitalism's peculiar characteristic. Much income now regarded as profit really represents other costs or is the illusory product of inflation. The crucial element in true profit is the marginal net gain that induces the risk-bearing essential for new firms, new methods, new products and expansion of existing production. If there were no growth, little or no profit would remain or be needed. Interest too has its main justification in a dynamic expanding capitalism, as an incentive for needed saving and as a means for rationing command over free resources.

In consequence, Wright rejects the labor theory of value. As a description of price formation it fits the stationary case tolerably well, though I would add that Wicksteed proved it involves an unneeded extra assumption. Even here it fails as a causal explanation, and it is totally misleading for the growth case. And as a critique of distribution, the theory is also unsatisfactory because it fails to recognize the contributions of saving, risk-bearing and entrepreneurship to increased productivity and higher real wages. For a growing capitalism, profit and interest cannot be regarded as surpluses arising from exploitation.

Regarding the business cycle, Wright holds that perfect stability is unattainable in the growing economy, because changes of tastes and of techniques do not smoothly offset each other. "It is *durability* of equipment plus asymmetrical *changeability* of wants plus inevitable frictions plus *consumer sovereignty* which produces the business cycle" (p. 153, Wright's emphasis). "Planning" can only achieve stability either by greatly slowing down or abolishing growth. Thus he rejects what he calls "left-wing cycle theories," those that rest on some form of the underconsumption hypothesis or presume that planlessness, rather than growth itself, is the cause of instability.

Turning to the problem of monopoly, Wright rejects appraisals that stem from the stationary models of pure or perfect competition. They have led welfare economists to concentrate somewhat myopically upon the division of the product rather than its growth. They also lead to overemphasis of market imperfections and to neglect of the constructive rôle of temporary high profits of innovation. Established monopolies and allied cooperative stabilization schemes are bad because they systematically underestimate demand and involve protection of vested interests at the expense of competition and growth. Standards for workable public policy here should consider in a given case how many rivals the alleged monopolist has, whether there is interproduct competition, and how long dominance has existed. Mere size and concentra-

tion are not alone sufficient guides. Most important, we require policies that encourage the emergence and growth of new firms, rather than private or government stabilization schemes, punitive taxation and union restrictions.

Like private business, trade unions are also capable of "tremendous distortion for anti-social purposes" (p. 184) by obstructing innovations, slowdowns and uneconomically high wage costs. All these may increasingly impinge upon marginal profits, innovation and growth. This is the primary issue, not whether unions can raise real wages for their (surviving) members. Of course they can. But at what costs to the economy as a whole?

In Wright's view capitalism can be "stabilized" in the sense of curbing the excesses of deflation and inflation. For the former, we require stimulation of private investment, coupled with temporary deficit spending, incentive taxation and a stable level of money wages. We should avoid restrictive stabilization schemes, soak-the-rich taxation and wage inflation. Anti-inflation policy suffers from the current delusion that inflation is a matter of "high" prices rather than real physical shortages induced by abuse of the power to create money. The basic cure lies in raising the rate of interest and increased taxation of mass income—"Keynesianism in reverse."

In Wright's opinion over-all stabilization of capitalism in a socially acceptable degree is possible without sacrifice of its unique promise for growth and rapidly rising standards of life. However, this cannot mean perfect individual security, and the attempt to pursue such security would be fatal to growth itself. Yet there is a very real danger that people will be led to expect and demand such securiy, particularly under the guidance of collectivist-minded intellectuals whose ruling ideas are drawn from the stationary society envisaged by Veblen and the erroneous doctrines of increasing misery proclaimed by Marx. What is needed is a better understanding of capitalism—its incentives, advantages, and problems—and a recognition that complete security, perfect justice and rapid growth cannot be had together in this life.

This book is a member of McGraw-Hill's Economic Handbook series. It is the product of mature thinking about these issues, and is studded with interesting critical comments. The style is very easy going, and for the most part the argument is well organized. Wright certainly succeeds in revealing the absurdity of the Marxian promises regarding the ultimate form of collectivism, in some respects even improving upon Mosca's classic discussion in *The Ruling Class*. Influenced by Schumpeter's precedent of restating old issues in new and often more informed ways, Wright has again placed the problem of growth in the foreground. The convention of comparing *growing* capitalism and its problems with *stationary* collectivism and practically no problems can no longer dominate the field unchallenged. At the same time, Wright candidly faces some of capitalism's serious problems, and cannot be described as a reactionary defender of the *status quo*. Wisely, in my opinion, he has committed his faith to creative individualism as the means to peaceful and constructive social change, free of stultifying political centralization and of an impossible demand for angelic human beings.

On the negative side, I regard his failure to grapple with the question of

imperialism an unfortunate omission. Also, reference to capitalism's statistical record concerning real income would have strengthened the total assessment. Regarding unions and monopoly, he has had the courage to face the problem, but without really suggesting an approach. I believe that the power of the unions to set the whole wage level is greatly overrated. Their gains, real and monetary—as Marshall recognized years ago—are far more the effect of market forces, particularly inflation, than a result of "bargaining power" as such. Once this is seen, monetary policy becomes the crucial instrument for control.

Otherwise, this book is an important contribution to a growing literature, in turn characterized by a much higher level of discussion. One may only hope that this development is not too late to have significant effect.

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From Wealth To Welfare: The Evolution of Liberalism. By Harry K. Girvetz. (Stanford: Stanford University Press. 1950. Pp. xiii, 323. $5.00.)

"Benthamism was a coherent system; its ethics, its constitutional theories, its jurisprudence, and its political economy were indissolubly linked together, and were indeed different aspects of one and the same theory of life and human nature" (p. viii). Thus, quoting from Dicey's *Law and Public Opinion in England*, the author proposes not only to demolish the Benthamite system and its latter-day Spencerian offspring, but to replace it in the same grand manner, defying "the boundaries by which social scientists have defined, often too neatly, the separate spheres of interest," by the system of "contemporary" liberalism. The title suggests a smooth evolutionary process as contemporary liberalism emerges from classical liberalism. This, in turn, was based on the psychological and political creeds of the 17th and 18th century, which "led the orthodox economist to concentrate on wealth to the neglect of welfare" (p. 148).

The psychological creed was a compound of four basic assumptions, the "four articles of liberal faith": (1) the psychological or enlightened egoism of Hobbes and its Benthamite variant of hedonism, (2) the assumption that man is rational, (3) psychological quietism, as distinct from political quietism, which assumes that man is indolent by nature, and (4) the atomistic view of "independent, homogeneous, unitary existences" (p. 21), who according to John Stuart Mill, are "obedient to the laws of individual human nature" (p. 23).

The selfish who are industrious "must be made secure in the possession, enjoyment and disposition of the fruit of labor" (p. 28), they must be "free to choose the task at which we shall labor" (p. 32). The indolent must "not have access to the fruits of toil without toiling" (p. 33). That takes care of the Benthamite creature whose "aversion to labor" is notorious. Thus, economic incentives are based either on fear and want or on invulnerable

sacred property rights (derived from Roman Law and anchored in the natural right doctrine).

This doctrine, however, led to conflicting conclusions. From Locke's conception of property "followed certain unexpected consequences." One may interpret such rights (a) in the medieval sense as *jus procurandi et dispensandi,* (b) with extreme individualism as *jus utendi, fruendi, ac abutendi,* (c) as functional, *e.g.,* in relation to social needs (as suggested by "contemporary" liberals), (d) as egalitarian ("If property is essential to the development of man's natural liberty, it ought not to be enjoyed exclusively by the few, as an odious privilege; all ought to be owners of property. Thus the same theory of natural rights which consecrated individual property . . . issued in the opposite conception, namely, Communism" [p. 89], quoted from Guido de Ruggiero, *The History of European Liberalism* [p. 27]). Both Bentham and Burke turned against jusnaturalism, when they realized the revolutionary implications of this doctrine.

The author carefully examines the divergencies and contradictions inherent in the *laissez-faire* system regarding the assignment of certain functions to the state, the limitations of political power, constitutionalism and the division of power. But he naïvely assumes that once the inconsistencies of the psychological and political creeds become apparent and are understood, and the underpinnings thus removed, the whole superstructure of the economic creed would come tumbling down (and without too close a critical analysis). In twenty pages he disposes of neo-classical assumptions, the "frictions" and "exceptions," simply summarizing what institutional economists have said before, and perhaps better. The orthodox economist is criticized for deriving concepts like the profit motive from the psychological creed of egoism, and for explaining it "without reference to its institutional origins and historical antecedents" (p. 131).

But the author, squeezing his material into a moderately sized book, too often omits or minimizes "institutional origins" and "historical antecedents." No mention is made of the rôle of the Middle West in starting the assault upon our *laissez-faire* system in the 70's and 80's, nor does he examine satisfactorily the baffling dualism between private (orthodox noninterventionist) theory and public (interventionist) practice. The rational arguments of the 18th century have become the accepted myths of our Middletowns. And it is harder to demolish myths than rational arguments. The popular constitutional monarch (with an adequate bank account), a composite of the Hobbesian "enlightened" egoist, the pleasure-seeking hedonist, the coolly calculating, independently acting individual isn't just a caricature drawn by the jovial von Mises. He has been accepted in our folklore as the object of affection, wooed through every means of communication, except mesmerism.

The author identifies his economic credo with that of "the rapidly growing (?) group of economists whose thinking has been influenced by Keynes and Hansen," "the professional economists of the contemporary liberal school" (p. 190), who have now come to realize that the profit system is inadequate to provide purchasing power for "goods whose manufacture would keep

idle workers and idle plants continuously employed" (p. 190). Interventionist arguments from the Beveridge Plan to Hansen's anti-cyclical remedial policies are summarized and blended with the author's social objectives.

For effective control of monopolistic concentration and pricing, he would (1) require federal charters of incorporation exclusively (as suggested by the traditionalist Henry Simons); (2) expand powers and funds of all quasi-judicial federal commissions (a horrible phrase, "Commissional Revolution," is coined to match, I presume, an equally horrible one, Burnham's *Managerial Revolution*); (3) apply the "Yardstick" principle proposed by New Dealers. "A publicly owned steel, automobile, or even cigarette manufacturing enterprise, subject to the same taxes and competing on equal terms with private enterprises in these fields, might accomplish miracles in exposing price-fixing arrangements and bringing a superior article to the public" (p. 256). One wonders.

Liberals now "relate welfare to the expansion of production in a dynamic society." They "no longer discuss welfare merely in terms of humanitarian regards" for disabled, *etc.* Still, the first objective of the welfare state should be: "the readjustment of incomes in order to provide adequately for the disabled and disadvantaged" (p. 231). Theodore Roosevelt (in a letter to his friend Jacob Riis) once proposed "to achieve by legislation . . . the diffusion of wealth in such a manner as will measurably avoid the extremes of swollen fortunes and grinding poverty." Thus, Theodore Roosevelt may have accepted the "contemporary" liberal's objectives, and yet rejected the welfare state *in toto*.

The author would have us believe that there is a clear-cut division between classical and "contemporary" liberalism, and that the latter constitutes a cohesive and influential force based upon a number of unifying principles, formulated by "the professional economists of the contemporary liberal school." Anyone acquainted with the economic literature of the last few years, even superficially, would have to challenge this position.

"It was the object of the Physiocrats," wrote James Mill (*Elements of Political Economy*, p. 76), "to transform society without a revolution by taking their stand upon a small number of theoretical principles." This is precisely what the so-called contemporary liberal is attempting to achieve. The dichotomy in liberal thinking stems from two basic facts: (1) though liberals may agree on social objectives, they sharply disagree on methods; (2) though they accept the meliorative functions of the state, they are poles apart on the extent of intervention (how far can we extend the powers of the state without creating a revolutionary situation?). Dicey objected to the Ten Hours Act in Britain though it "has put an end to much suffering." But it "has tended towards socialism, and contains within it the germs of an unlimited revolution, of which no man can as yet weigh with confidence the benefits against the evils . . ." (p. 61). Hayek, the *bête noire* of the "contemporary" liberal, attacked Keynes' interventionist recommendations. Yet, according to Harrod, Keynes was quite impressed with the *Road to Serfdom* arguments against the welfare state.

In his review (*New Statesman*, May 26, 1951) of *Restatement of Liberty*

by P. C. Gordon Walker (a former Minister in the Labor Cabinet), R. H. S. Crossman, a Labor M.P., chides his colleague for calling halt to experimentations, for preferring consolidation now, and for resurrecting the economic man in a new garb. Classical liberals would be appalled by the following quotation from Walker's book:

> Once the State discharges on behalf of society the main social obligations that attach to wealth (*i.e.*, introduces full social security), then industry, whether in public or private hands, can without scruple regard man at his place of work as economic man and nothing else. . . . It can concentrate solely upon the end of economic efficiency.

And the Socialist Crossman, too, is annoyed by "this repellent picture of Socialist regimentation." Walker, true to classical tradition, fears that a social transformation may lead to a revolutionary situation, while Crossman insists that the failure to fully realize a Socialist program would drive British workers into the arms of Communism! *Experto credite!*

Space does not permit further discussion of complexities besetting contemporary liberalism. Rent by centrifugal forces, harried and confused, it simply cannot fit into a neatly devised "coherent" system (*à la* Bentham). Dr. Girvetz has written a highly stimulating, well-documented and, in some respects, unique treatise. But its influence upon our time (as compared to Bentham's upon his) will, I fear, be quite negligible.

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The Social Crisis of Our Time. By WILHELM RÖPKE. (Chicago: University of Chicago Press. 1950. Pp. 260. $3.50.)

This book by the distinguished German economist, first published in Switzerland in 1941, has lost none of its freshness and has perhaps gained something in impact in the intervening years. Like the hapless Louis XVI, whom he quotes, one is tempted to say: "I have seen all this coming for the past ten years. How was it possible that I never wanted to believe it?"

The disease which is spreading throughout Western civilization "is characterized by a process of social decomposition and agglomeration for which the term 'collectivization' has been coined" (p. 10), a term which would include communism no less then capitalism. The root of the evil is massism, as Ortega y Gasset described it, and the resulting "proletarization," urbanization and mechanization of life. Gradually these forces destroy the protective integument of faith and conviction, which a secularized Christianity left in its wake—an integument without which man not only loses a certain natural sureness of instinct but the sense of elementary human relationships as well. Röpke is only too conscious of the limits of rationalism, of the Unconditional and the Absolute, and expresses deep respect and reverence for the traditional, the proven and the pre-capitalist.

He is exceedingly critical—and in this he is certainly not alone—of the foundations of 19th century economic thinking. Liberalism and socialism have erred in making rational economic man the keystone of their models—

the former mainly by losing sight of the necessary political and sociological conditions circumscribing a free market, the latter by regarding society as a machine. "Socialism is not a utopia, but a tragedy" (p. 153). The original sin is economism, "making material and economic interests the center of things by deducing everything from them and subordinating everything to them" (p. 53).

Mass society leads not only to "politicalization" of economic processes, but ultimately to the tyrannical, totalitarian state. "The executioner has the last word in the socialist state" (p. 98). Certain political and economic systems always go hand in hand, it being impossible to combine just any political system with just any economic system. Economic planning is just another name for socialism and both lead inevitably to tyranny. This of course sounds like Hayek, but the reader will at least have to concede that Röpke is the sophisticated man's Hayek.

The second part of the book deals with action to be taken. Röpke recommends the "Third Way" consisting of decentralization, promotion of small units of production, ruralization, prevention of monopolies, "development of new, nonproletarian forms of industry," elimination of over-complicated methods of organization, specialization and division of labor and "sensible limitation of state intervention according to the rules of, and in keeping with, the market economy." He points to Switzerland, where he now teaches, as a model of such a society, corresponding largely to his program. The peasant and the artisan represent to him an ideal way of life and the small entrepreneur is preferable both to capitalistic enterprise and to socialism.

It is perhaps in this part that many readers will part company with the author. His analysis, so similar to Ortega, Benda, Schumpeter (in his last phase), and reminiscent of much in Sismondi, Proudhon, Ruskin and others, is accepted by many intellectuals, especially in Europe. Some will express doubt about the inevitable road of a planned economy to totalitarianism. They will perhaps accuse Röpke of having himself succumbed to infatuation with the unconditional and the absolute. The major criticism to be made has to do with his preference for a small-scale, decentralized, Jeffersonian economy, his "reduction of all dimensions and conditions to the human mean." However desirable that might be, and in all probability is, it is more than unlikely that large-scale production will be abandoned, industry demechanized and, in general, much of the latter phases of the industrial revolution undone. On the contrary, the process of mechanization and massization is rapidly spreading all over the globe, with the underdeveloped countries avidly seizing their opportunity to travel the road of the West. Rearmament is adding another dimension to mass society, making output of strategic materials even more compulsive and political controls ever more universal. Thus, even assuming that rational economic man be given up, it would appear that rational military man will perpetuate and intensify all those aspects of modern society condemned and abhorred by Röpke.

It is difficult, in spite of the foregoing, not to admire Röpke's grasp of literary material as well as his encyclopedic familiarity with the economic and social realities of our age. His views undoubtedly represent the

quintessence of liberal and humanist thought of contemporary Europe, not so much in their details of analysis and conclusion, as in the general atmosphere of hostility to mechanical, soulless bigness. They will therefore arouse the wrath of many Americans no less than that of Russian and other communists. Perhaps, after all, Röpke's disillusionment with modern civilization is only an expression of the lassitude which two world wars have left in their wake in an old and weary continent. It is a book worth reading and heeding.

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National Income and Social Accounting

National Income Behavior: An Introduction to Algebraic Analysis. By THOMAS C. SCHELLING. (New York: McGraw-Hill. 1951. Pp. x, 291. $4.50.)

This book discusses in great detail a part of the material that would ordinarily be covered in a course on income and employment. It deals elaborately with the theoretical relationships between national income and its components and is reminiscent of the article on "Simple Mathematics of Income Determination" by Paul Samuelson in *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen.* Schelling has made his book even simpler, however, in that he does not use any calculus at all. The book requires a knowledge only of the most elementary algebra and might have been called *Simpler Mathematics of Income Determination.* The rather frightening impression one gets on leafing through the book is not substantiated on reading it. There is a clear and orderly development and explanation of the algebraic techniques used. For instance, such concepts as identity, intercepts, parameters, and the process of solving equations are explained. The economic concepts used are also elucidated.

The major part of the book is devoted to a "static" analysis of the components of national income. (Schelling confines the term "dynamics" to problems which in some "essential way involves chronological sequences of time.") Thus the book deals mainly with relationships that do not have time subscripts and do not involve sequence analysis. This will be disappointing to those who would like to begin their exposition of national income problems through the use of time periods and the relationship between different time periods.

The book has an important merit in that it brings to the attention of the reader at a very early stage the place of inventory fluctuations in income analysis, but one might question the author's mechanistic approach. His analysis is based on the assumption that any depletion of inventories results in a replenishment. The possibility that expectations might be changed during the period of depletion, and therefore that any previously determined policy concerning inventories might be altered, is not considered. Thus the Swedish distinction between intended and unintended inventory changes and the different effects they will have on expectations concerning the future are not

incorporated in the analysis. It must be recognized that the depletion of inventories does not in itself provide a basis for concluding that inventories will be restored to their previous level. Even under restrictive assumptions which would prevent outside influences on expectations, the mere nature of the original depletion of the inventories may affect business outlook and policy concerning inventory accumulation.

This is only one example of the tendency to use a very elementary set of assumptions in spite of the length of the book as a whole and the elaborate detail in which some problems are treated. Another example is the discussion of the acceleration principle, which is on traditional, simplified lines. Schelling does, however, introduce some sophistication into his analysis through the concept of "anticipated sales."

This book provides a valuable exercise for the student of national income. It contains little that is new to the specialist in income theory and it leaves out much theoretical material and nearly all statistical analysis that have appeared in recent years. It does not contain a discussion of the development of national income analysis, nor a consideration of the problem of estimating national income, nor a review of the efforts at a statistical testing of the behavior relationships of the components of national income.

A prospective reader should bear in mind, however, that this book is intended, as its sub-title indicates, merely as "an introduction to algebraic analysis." The book is designedly concerned more with technique than with substance; hence, some of the fundamental problems of "national income behavior" are not considered in detail. For instance, in a study entitled National Income *Behavior*, the reader may expect a statistical treatment of the consumption function. However, there is only a brief reference to Duesenberry's work and no discussion of Modigliani's contribution to this subject. Studies that have been made along statistical lines in an attempt to determine the numerical magnitude of the parameters involved in the national income equations—notably those by Tinbergen—are not considered. The book does, however, provide a good background for a study of such statistical efforts. It fulfills its intended—and restricted—purpose of providing an introduction to the use of algebraic techniques in the theoretical analysis of national income and its components.

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Studies in Income and Wealth, Volume 12. (New York: National Bureau of Economic Research. 1950. Pp. xiv, 585. $6.00.)

This volume contains papers presented at the January, 1948 meetings of the Conference on Research in Income and Wealth and comments thereon made by participants in the Conference who did not themselves deliver papers. The introduction by Morris A Copeland is, in many respects, one of the most valuable parts of the whole and more of this will appear below.

The first paper by R. W. Goldsmith on "Measuring National Wealth in a System of Social Accounting" makes interesting distinctions between national business accounting, on the one hand, and national economic accounting, on

the other. The distinction rests largely on the view that "national economic accounting, then, is a combination of the technique of double entry accounting with market values of transactions, assets, and liabilities, adjusted to conform to the requirements of economic theory as it is now understood by a large body of professional opinion." The discussion of this distinction is of real interest but, as the author himself suggests, ". . . the theory of national economic accounting is . . . not uncontroversial. . . ."

The second paper by A. G. Hart on the uses of national wealth estimates and the structure of claims contains very interesting comments concerning the manner in which claims of various types must be dealt with. It is interesting and relevant to note that one of the participants in the conference, Gardner C. Means, points out that the methods followed by Professor Hart suggest that the title of the paper should be "Uses of National *Assets* Estimates" rather than "Uses of National *Wealth* Estimates," and points out some real conflicts which cannot be resolved in the absence of more precise use of these terms.

Part II consists of nine papers on wealth estimates for various sectors of the economy. R. J. Burroughs writes on the agricultural segment; L. A. Reuss on land utilization data as background information for the national balance sheet and attempts some approximations of the value of forest land; H. Foster Bain and others deal with the problems of estimating subsoil wealth, while M. R. Gainsbrugh and Lucie Krassa concern themselves with the problem of the balance sheet of manufacturing enterprises. D. A. Kosh writes on the tangible assets of public utilities; G. M. Cobren on the non-farm business inventory component; Lenore A. Epstein on consumers' tangible assets; J. E. Reeve and others on the government component in the national wealth; Solomon Fabricant on government-owned non-military assets since 1900; and the volume concludes with a paper by R. L. Sammons on foreign investment aspects of measuring national wealth.

While the papers in Part II are interesting, most economists concerned with social accounting and with the measurement of income and of wealth will find more of interest in the nature of the case in Part I. This results from the decision to put the papers dealing with "over-all assignments" in Part I and those dealing with a special "wealth sector" in Part II. In particular, I call attention to "A Note on Negotiable Claims" by Copeland in which certain aspects of the study of money flows, in which he has been engaged, are discussed.

While the attempt to develop measurements of wealth of a kind providing an accounting analogy to the measurements of income developed in recent years is interesting and important, and while this volume is a contribution thereto, this reviewer finds Dr. Copeland's introduction of great value in an attempt to understand the difficulties to be faced in such an enterprise. More particularly, Copeland's summary of the areas of agreement and disagreement among the participants (pp. 7-15) is valuable. Many of the disagreements arise from the views of the participants concerning the theoretical basis for determining the constituents of wealth. Others stem from the conviction that the measurement of wealth, in essence, involves a "wel-

fare appraisal," although the notion of welfare is here, as elsewhere, vague. Areas of agreement concerning the problem to which this volume is addressed were, however, achieved and should be important in determining the direction of subsequent efforts. We may look forward to continued refinement and to extended efforts at measurement by the Conference on Income and Wealth. The achievement to date is promising.

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Business Fluctuations; Prices

Business Cycles and National Income. By ALVIN H. HANSEN. (New York: W. W. Norton & Co. 1951. Pp. xv, 639.)

This bulky volume is a brief survey of a wide field. Part I, on the nature of business cycles, presents in ninety odd pages a statistical account of "major" cycles in the United States since 1872, using Frickey's index of production of durable manufactures; a note on the existence of long building cycles in the United States with their chronology; a comment on secular swings in price level, on "long waves," and on growth trends in real processes; and, in conclusion, a statistical picture of investment during business cycles as reflected in national income components for this country, largely since 1929. Part II, on the theory of income and employment, deals, in about 120 pages, with national income definitions and the meaning of a nation's economic budget, and then largely with the quantitative and quasi-mathematical concepts and "functions" of current macro theory—saving, investment, consumption, the multipliers, the accelerators, the propensities, etc.—concluding with a chapter on government outlays, again in a formal exposition of effects on investment and consumption. Part III, 290 pages and the longest of all, is a historical review of business cycle theory, from Lord Lauderdale to Wesley Mitchell, the theories grouped by dominant approach (aggregate demand, confidence and credit, the rôle of investment, etc.), with one supplementary chapter by Richard Goodwin on the econometric approach to business cycle analysis, and others on recent developments in analysis of oscillation and growth (Domar, Harrod, Hicks) and on the foundation stones and basic framework of business cycle theory. Part IV deals, in about 100 pages, with business cycles and public policy, ranging from comments on recent issues and policy recommendations to a survey of forecasters and statistical indicators, and concludes with a chapter on international effects.

The discussion throughout is concise, illuminatingly clear, and reflects Professor Hansen's firm adherence to Keynesian emphasis on investment as the strategic element in business cycles, and his faith in the corresponding type of reasoning as a basis for understanding economic processes and formulating economic policy. The book attempts a summary of wide literature, and thus constitutes a highly useful reference volume. And surely it more than satisfies the purpose which the author unduly minimizes in the Preface when he de-

scribes it as "a modest contribution to a better understanding of the current theory and historical development of macro-economics" (p. vii).

The volume may be taken as designed for that purpose exclusively, to acquaint readers with economists' writings about business cycles and with the theoretical analysis of income and employment relating thereto. If so, we would have to refer back to the authors quoted or summarized (including Professor Hansen himself) and to those omitted—to see how well their views have been set forth and how justifiable were the omissions. For such a task the present reviewer has neither the competence nor the urge. Professor Hansen not only describes the theories and models, but also passes judgment on them, in the light of what is known about business cycles and related phenomena—presumably from empirical data. And in so doing, he gives this reviewer an opportunity to ask why we should be interested in past or current economic theory bearing on business cycles. Obviously we are interested in this theory and research not only as a history of intellectual processes as such or of opinions that influenced public or private policy in the past or may influence it currently, but chiefly because they may shed light on the characteristics of business cycles as they transpired in observable reality, and may help explain these fluctuations in the rate of economic activity by relating them to other parts of the organized body of established knowledge.

From this viewpoint the book gives rise to several disturbing questions, some of which are presented with hesitation because they raise fundamental issues for which a review is scarcely an appropriate medium.

1. If the empirically observed characteristics of business cycles, classified with respect to their occurrence in time and space, define the task of business cycle theory and provide the touchstone by which its adequacy can be judged, is the discussion in Part I at all adequate, particularly in view of the elaborate classification of types of cycle and of patterns of movement over time that Professor Hansen erects? In his discussion, Professor Hansen refers fleetingly to major cycles, minor cycles, "long waves," building cycles, secular swings in price levels, and illustrates them with data almost exclusively for the United States. Which of this welter of types of movement is business cycle theory supposed to explain? What are the invariant or approximately invariant characteristics of business cycles that theory must recognize and account for? It is difficult to see how a theory can be judged unless its empirical referent is clearly defined and the outstanding characteristics of that referent are established.

2. A theory of business cycles is presumably something more than a model to show how a cycle, of vaguely defined duration (4 years, 15 years?) and of variable amplitude and generality, is *possible*. Human imagination is fertile enough to produce such models by the dozen. Each such model naturally contains some realistic element since one's imagination can feed only upon observations of the material world no matter how distorted. But it is equally true that each such model, viewed as more than a formal demonstration of one of the many possible ways in which a cycle *can* occur, will be found deficient, since it omits some variables and fails to assign weight to those that it stresses. The task of business cycle theory is presumably more ambitious:

to explain common characteristics of business cycles as they are observed within certain broad limits of economic history. This task of explanation can be spelled out by: (a) setting the historical limits of the phenomenon (in space and time); (b) measuring or otherwise recording its recurrent and variant characteristics for the national economies and their important components, within the limits set under (a); (c) maximizing the elements of empirical observation and minimizing the elements of "assumption" in tying cyclical phenomena to their determinants, *viz.*, to other knowledge concerning economic behavior. In the light of these considerations the question raised under (1) concerning Part I of the volume assumes particular meaning and one wonders why in Part II, the bulk of the discussion (Chaps. 9-12) which presents the propensities, the accelerators, the multipliers, the "functions," is completely bare of any empirical evidence (excepting a chart on stock and replacement of passenger cars in the United States, Figure 53, p. 189). All these tools and models of the current theory of income and employment are useful indeed. But they are manifestly incomplete for business cycle analysis: the neglect throughout of price movements and of the price element in general is particularly conspicuous. One could derive models of cycles from assumed price changes and differing propensities of different price groups just as easily as from accelerators, multipliers, and functions envisaged for economic magnitudes in "real" (*i.e.*, constant price) terms. Nor does there seem to be much evidence in this volume of the urge to fit the models to the observed reality, and gauge their weight. Surely, the time has come for these analytical tools, each necessarily partial and limited, to be tested within the framework of empirically observed cyclical processes.

3. The comments just made indicate the question that is raised by Professor Hansen's lengthy review of business cycle theories in Part III. I assume that both Professor Hansen and his readers are only mildly interested in such an account as a history of intellectual struggles, which illuminate the capacity of human mind when confronted with a complex phenomenon with no possibility of experimental control and with strong pressure for defensible answers that would justify policy. I assume that both Professor Hansen and his readers are more interested in the substantive value of these theories, in their possible explanation of business cycles as they occur. But we get no such distillation of what is valid in each group of theories. Even if data and analytical tools are insufficient for a thorough appraisal that would succeed in attaching weights to factors stressed by one or another theory, an attempt at appraisal should be made if these theories are to be used as hypotheses for analysis of observable reality.

Greater emphasis in this direction might have obviated a type of value judgment which this reviewer finds it difficult to accept. Hobson's contribution is minimized (p. 255) because it seems to Professor Hansen that he does not add much to Lauderdale and Malthus in the movement toward current theory of income and employment—as if this were an important criterion. Tugan-Baranowsky is lauded as a great pioneer (p. 281) although one can easily argue that much of his emphasis on investment processes came from Marx. (Curiously, Marx is given little room in the long survey of theories.)

Wesley Mitchell is blamed explicitly for not recognizing the significance for business cycle analysis of this reviewer's estimates of national income and capital formation (p. 408) and implicitly for rendering business cycles a "popular and agreeable concept" (p. 395). Perhaps, in the absence of established knowledge, one can judge past theories only in terms of their distance from current theoretical notions and in the light of one's general preconceptions and impressions. But obviously such a practice leads easily to abuse.

4. Although in his account of theories Professor Hansen inevitably recognizes the historically changing *view* of business cycle phenomena, he appears to be little concerned with the historically changing characteristics of business cycles themselves. The latter may in large part explain the former. For example, the shift in emphasis from "commercial crises" to "cycles in investment" may reflect the changing features of cycles in an economy shifting from domination by commercial capital to domination by industrial capital. Even more important, greater attention to the changing historical framework of business cycles might have led to a readier recognition of much of economic theory as an attempt to generalize, and a tendency to over-generalize, certain recently emerged features of the economic process—which may not have been prominent in the past and which, in their recent emergence, gave rise to economic problems that cried for a new theoretical base for their solution. One wonders to what extent the easy acceptance of Keynesian theory, with its emphasis on the limited effect of changes in interest rates and wage rates in adjusting the economy to short-term swings—particularly the reductions as adjustments for pulling the economy out of a depression—was due, almost unconsciously, to a demonstration provided by relatively recent changes in the structure of the economy in Western countries. It was the emergence of large industrial firms, independent of bank credit, resistant to price competition, and capable of weathering a depression of almost any magnitude, and the high standards of living, large relative reductions in which did not mean starvation, that permitted the development of a downward spiral of contraction during a business depression to much lower levels than could be envisaged in times of smaller firms, price competition, widespread failures, and standards of living that provided a relatively "high" floor for consumer expenditures. The Keynesian "revolution," like all other revolutions in economic theory, may be viewed as an attempt to rationalize a relatively recent change in economic processes into some general theory that would provide a basis for intelligent policy action. While this explains the rapid spread and the practical usefulness of such "revolutions," it also indicates that, almost in the nature of the case, an economic theory so evolved tends to exaggerate the area of its application, in time and space, as well as to overstate the degree to which the newly stressed factors do in fact displace those emphasized in the earlier "revolutions." Greater emphasis on historical conditions in which business cycles occur and on the historically changing basis for reformulations in economic theory, might have led to a more circumspect appraisal of the policy problems—the discussion of which in Professor Hansen's book is still dominated by his earlier translation of the Keynesian apparatus into a theory of secular stagnation.

I would be the first to regret it if these questions and comments were interpreted as representing an adverse judgment on Professor Hansen's book as a contribution to the literature of economic scholarship. They refer rather to a broad field of that economic scholarship itself; and it is because Professor Hansen's volume is such an extensive and clear review of that broad area that these questions and comments seemed appropriate.

SIMON KUZNETS

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Defense Without Inflation. By ALBERT G. HART. (New York: Twentieth Century Fund. 1951. Pp. xiv, 186. $2.00.)

Financing Defense. By ALBERT G. HART and E. CARY BROWN, assisted by H. F. Rasmussen. (New York: Twentieth Century Fund. 1951. Pp. xiv, 161. $2.00.)

Defense Without Inflation and *Financing Defense* are the first two volumes of a four-volume series on the problems of stabilization in a mobilized economy, published in the spring and midsummer of 1951, respectively. Separate studies of direct controls and monetary policy are to follow. The entire series is being produced under the direction of Albert G. Hart for the Twentieth Century Fund. The reports by the authors are supplemented by recommendations for economic policy by a specially constituted Committee on Economic Stabilization. The Committee members are: John Maurice Clark, chairman; Theodore W. Schultz; Arthur Smithies; and Donald H. Wallace.

Both reports and recommendations are brief and are written for the general public. Teachers looking for current material on stabilization problems to supplement their courses should find both books useful.

Defense Without Inflation, published first, was "designed as an over-all review of general strategy." It opens with an outline of current defense goals and takes up in turn the problem of full mobilization, the strategy of readiness, inflation, direct controls, budget policy, monetary policy, and finally presents some thoughts of the author on the best strategy to follow in the period ahead. The recommendations of the Committee on Economic Stabilization are contained in a brief concluding chapter.

Financing Defense concentrates on the national budget and the various methods of raising federal revenues to avoid the inflationary repercussions of greatly increased defense expenditures. The first two chapters are designed to give the theoretical and factual basis for the subsequent analysis of specific measures. Concluding that greatly increased taxes are required, Hart and Brown make a short digression in the next chapter on subsidies and tariffs which they treat as measures which may run counter to the general rule "that it is inflationary to increase government outgo or to cut government receipts." The next four chapters concentrate on the advantages and limitations of various tax measures, taking up in turn, commodity taxes, personal taxes (other than income), the personal income tax, and taxes on profits. The un-

certainties of both federal receipts and expenditures and some suggestions about budgeting under such conditions are discussed in the final chapter. The report of the Committee on Economic Stabilization follows.

In *Defense Without Inflation,* Hart stresses the importance of budget policy and monetary policy, and it is his judgment that major tax increases and further credit controls should be used to restrict consumer and business spending. The necessity for direct controls of prices, wages and the allocation of materials is accepted by both the author and the Committee on Economic Stabilization, although the Committee suggests in its recommendations at the end that a much less extensive control program might have been adequate had the fiscal and monetary powers of the government been used more effectively. They state, "At the time we write, the government has decided to resort to comprehensive direct controls. We see no point in debating the necessity of that decision, *although we believe that had an adequate fiscal and monetary policy been pursued, we might have been able to work out a control system on a selective basis.* Its continued adequacy would depend on the absence of an inflationary wage push. Furthermore, this is an appropriate time to stress the dangers of undue reliance on a direct control system. We now run a serious risk that present policy will reproduce that of World War II, rather than be adapted to the needs of the present mobilization." (Italics added.) Hart shares the Committee's fear of the breakdown of direct controls and is equally strong in his support of the maximum use of monetary and fiscal policies, but both fail to develop a program of selective controls that could be considered an alternative to the comprehensive program to which the government is committed at the moment.

In *Defense Without Inflation,* Hart does an excellent job of analyzing the effects of increased production upon the inflationary trend over the next few years although it is the hunch of the reviewer that he may have underrated the significance of increasing productivity as a factor lessening the severity of the cutbacks in consumer goods and the inflationary influence of rising wages. The possibilities of changing levels of savings are also largely neglected although the spectacular increase in saving in the second quarter of this year may possibly be evidence of the importance of this variable in the situation, though the defects of the saving statistics make this factor uncertain.

Although Hart concludes that direct price and wage controls are essential, he places great stress upon the use of indirect controls to reduce the margin of excess demand. The delay in tax legislation and the weakening of the extended Defense Production Act emphasize the obstacles to the passage of legislation that will give us the sort of balance in our stabilization program that he wants. This he does not discuss and it still remains as the number one problem of the day.

Conclusions of the Committee on Economic Stabilization at the end of *Defense Without Inflation* which are of special interest are in line with the analysis of Hart. They support a tax program designed to raise $16 billion in a full year, of which some $9 or $10 billions should be raised by the personal income tax, $4 billion largely from the corporation normal tax and

the balance from excise taxes. They also stress the importance of voluntary acceptance of a government administered limitation of wage increases. They also believe that this is the time to increase the size and coverage of the social security program. They end with a strong affirmation of the capacity of the American economy to meet the cost of the defense program and to continue to expand.

Financing Defense does not depart from the general position developed in *Defense Without Inflation*. The question of the best tax policy to follow is discussed by the two authors with objectivity and notable lack of dogmatism. In the discussion of the place of a sales tax there is even a footnote indicating a difference between the two authors as to the rôle it should play in the anti-inflation program. One of the most useful parts of this volume is the analysis of various proposals to use new types of taxes as anti-inflationary devices. This includes the spendings tax, compulsory savings, taxes on increases in income and a tax on net-worth.

The emphasis of the authors and the Committee on Economic Stabilization upon the dangers of the reaction of labor to increased sales or excise taxes which would raise the price of goods to the consumer is well taken but they neglect the equally troublesome reaction of labor to a reduction in take-home pay as the result of an increase in personal income taxes deducted at the source.

The conclusions of the Committee on Economic Stabilization stress the need to "keep the economy as free as possible . . . to safeguard productive efficiency and work incentives, to keep the door of economic opportunity open and to keep economic policy adaptable for future changes." They repeat their recommendation of a $16 billion increase in revenues and point out that if it proves to be larger than necessary it is easy to reduce, much easier than to increase an inadequate program.

These two books are admirably designed to serve the purpose for which they were published by the Twentieth Century Fund. There is no current material which gives the average citizen as clear, objective and comprehensive a picture of the issues of stabilization policy. These studies have the field to themselves and should be widely used as long as the defense crisis is with us.

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Personal Income Tax Reduction in a Business Contraction. By MELVIN I. WHITE. (New York: Columbia University Press. 1951. Pp. 144. $2.50.)

This interesting study is an attempt to quantify one of the most important and troublesome aspects of fiscal policy— that of the tax reduction necessary to combat declines in personal income in the contraction phase of the cycle. The analysis indicates the shortcomings of automatic compensatory movements of tax revenues usually associated with "built-in-flexibility" tax programs and points out the advantages of adjustments through rate and exemption changes in the personal income tax.

The first half of the study presents the potential anti-deflationary con-

tributions of personal income tax reduction under the assumption that there are no timing difficulties to curtail the effectiveness of the tax reduction. A model is established, and three specific plans are examined in this context: (1) a plan revealing the effectiveness of "built-in-flexibility" with 1945 surtax rates and personal exemptions unchanged from the peak year throughout the contraction; (2) a plan calling for a 50 per cent increase in personal exemptions; and (3) a plan similarly increasing exemptions while also cutting the first surtax bracket rates to zero. The goal set for these plans is the prevention of a decline in personal factor income (personal income minus transfer payments) of more than 10 per cent or $22 billion from the peak year.

The hypothetical business contraction is described in terms of deviations from expenditure and income accounts for the peak year (with a GNP near that of 1950). To show the relative effectiveness of the three plans the aforementioned allowable 10 per cent decline is assumed to exist in the contraction. The effect of this decline on personal consumption expenditure (under the three plans) is estimated together with the resulting declines in net business expenditure (investment) that are permissible in order to stay within the limits of the 10 per cent goal. The maximum permissible declines in net business expenditure for plans (1) through (3) range between $12 and $24 billion respectively or from 50 per cent to 133 per cent of peak year investment thus showing the greater counter-deflationary potentialities of exemption and rate changes.

The second half of the book demonstrates the significance of appropriate timing. A formula for timing tax cuts is developed using the three plans mentioned and another alternative of a uniform 10 per cent reduction in computed tax bills. The formula designates the proper plan as personal factor income deviates below a peak reference period. The successful operation of the formula depends upon the pattern of decline that is followed by investment during the contraction. The limits to this pattern are specified for annual and semi-annual programs of tax change and for decline periods of one to three years. The conclusions reached are that tax reduction will be more effective the longer the decline period and the more frequent the rate changes. The problem of timing is further emphasized and clarified by showing the maximum extent to which tax reduction can fail because of defective timing. The results of this thorough and rigorous analysis of timing are expressed in quantitative terms, and this is the outstanding feature of the book. One may wonder, however, if more allowance for qualitative changes during the contraction should be made—for example, are the differences in the *dollar* reductions of personal income resulting under the alternative plans the sole and sufficient basis for judging their relative effectiveness? Also what would be the effect of the tax reduction plans on the distribution of income?

In such a study there are necessarily many assumptions, and a commendable feature of this book is the devotion of a chapter to these assumptions and their relaxation. Also some space is devoted to the application of the analysis to the 1929-32 and 1937-38 contractions in the United States. These

are but a few of the good features of this book which, given the assumptions, does much to bring the theorizing over counter-cyclical activity to hard reality.

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Money and Banking; Short-Term Credit; Consumer Finance

A Discussion of Money. By W. A. L. COULBORN. (New York: Longmans, Green and Co. 1951. Pp. xiv, 356. $3.50).

Among the many books that are written on or near the textbook level in the field of money and banking Coulborn's *A Discussion of Money* deserves special attention. Written by an Englishman and emphasizing British conditions, the book could not very well be used for a beginner's course in Money and Banking as taught in American colleges. But Coulborn's *Discussion* is in many respects so excellent that one can only hope that it will be widely used for collateral reading. Since Robertson's *Money,* no better written book has been published in the field. Coulborn's charming dialogues between Professor Harp and Dr. Carp should become as famous as Robertson's quotations from *Alice in Wonderland.*

As in Robertson, however, the facility with which the book is written is partly deceiving. The *Discussion* is a difficult book, possibly too difficult for the beginner. The difficulties stem from the fact that Coulborn has written a real economics of money and banking in which he wants to integrate the theory of money and general economic theory. The book is designed to lead to a thorough understanding of the problems and does not shy away from questions because they are difficult.

In reading the book I kept wondering why the chapters follow one another the way they do. But there are so many possible approaches of which none is clearly the best. Still, it is hard to see why a sketchy discussion of the Keynesian theory of the trade cycle should follow directly upon a thorough treatment of the quantity theory and precede the chapters devoted to alterations in the value of money and to central banks.

It also seems to me that some problems are much more thoroughly treated than others, with the result that the degree of difficulty varies substantially. Compare for instance the exhaustive treatment of the nature, services and origins of money with the rather meager remarks on saving and investment.

These criticisms, however, do not detract from the great value of the book, if the book is only used for collateral reading or for a second course in Money and Banking. Then the student will know anyhow where a given problem finds its proper place and the more advanced reader will feel equal to Coulborn's demands upon his analytical ability. For such use the book is excellent. It represents just the right mixture of theory, institutional descriptions and historical surveys. The selected problems are all of real interest to the economist. It is also to be noted with approval that the student will be exposed to what seems to be a fair mixture of old and new theory.

I could not find any important passages where my own opinions differ from Coulborn's by more than the degree of emphasis.

I want to urge teachers of the course in Money and Banking to make frequent use of this extremely well written book. It is a real contribution to a field which seems to be already oversupplied with texts of all varieties.

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Segunda Reunión de Técnicos de los Bancos Centrales del Continente Americano. Banco Central de Chile. (Santiago: Imprenta Chile. 1950. Vol. I, pp. 379; Vol. II, pp. 254.)

These two volumes, the proceedings of the second (1949) meeting of American republic central bank technicians, show anew the progress that is being made in a vital area of international relations. The participants consisted of officials of most of the hemisphere's central banks (only Argentina and Brazil among the major nations were unrepresented) plus representatives of the International Monetary Fund, the International Bank for Reconstruction and Development, and the Economic Commission for Latin America.

Deliberations dealt with issues in four principal fields: inflationary and deflationary tendencies and countercyclical policies, foreign exchange problems, the rôle of monetary policy in over-all (domestic) economic stabilization, and central bank cooperation in dealing with common technical problems. Students of hemisphere economics will do well to consult the many papers, and the discussions thereof, to be found under each of these headings. Particularly noteworthy are the papers dealing with inter-bank cooperation on technical problems—those relating to statistical techniques, balance of payments, and national income.

The meetings could well be put on a biennial basis. This meeting followed the first by three years; but judging from the operating benefits obtained by the officials from their interchange of views, they could advantageously meet at shorter intervals.

There is not space to go into detailed criticism of the papers. On the inflation issue, however, I think the participants missed an opportunity to stress the need for vigorous taxation as an indispensable supplement to monetary action. In the distribution of assignments at the meetings, I would have preferred relatively more participation by the Latin American technicians and fewer papers by officials of the Federal Reserve System and the International Monetary Fund, inasmuch as the latter have ample facilities for the publication of their views. It is regrettable, too, that Brazil did not participate, both because of the relative importance of the country and the excellence of some of her central bank people.

The Central Bank of Chile, host for the meetings, and Dr. Herman Max and his research staff, who directed the arrangements, are to be congratulated for having given us an attractive two-volume record of the proceedings.

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Business Finance; Investments and Security Markets; Insurance

Economics of Investment. By Jacob O. Kamm. (New York: American Book Company. 1951. Pp. xii, 547. $6.00; text ed., $4.50.)

Following the trend of investment writing since 1940, this and other post-war books on investments and security markets are particularly directed toward discussions of the management of portfolios. Professor Kamm has drawn on his experience as a teacher and as a practicing consultant to write a very readable text for the elementary student of investments, especially for liberal arts colleges and adult education groups where a minimum of financial and accounting background is assumed. While the author states his intention of dealing with the relations of investments to economic considerations, he has interpreted this as an economic analysis of the subjective factors affecting investment values rather than the relation of outside or market influences. Into this theoretical analysis of market prices in the long run has been injected a description of the more institutional details of security transactions in an effort to evolve both a theoretically sound and a practical text. The difficulties of writing such a book in logical sequence are great. Professor Kamm has made a valiant effort, although some readers might well quarrel with the order of development.

Investment is viewed as involving longer-term commitments of funds in securities for purposes of monetary income or capital gain, although the holding of cash in periods of falling prices is also identified as a source of gain. Speculation is held to involve only expectations of short-term capital gains. The investor under these conditions must emphasize internal analysis of the firm, while the speculator makes a more technical analysis of the existing and prospective market conditions. The author does not then proceed to evolve a theory of intrinsic value beyond the theoretical stages of capitalizing expected income and capital gains. Current yield "reflects not only the expected future yield but also expected changes in future annual income which cannot be reflected in the actual current return" (p. 295). While this line of reasoning is defensible, the identification of current yields and future yields leads to some logical difficulties. The author illustrates his approach mathematically with ingenuity. Incidentally, this reviewer has never found bonds maturing at 102, as the author states (p. 309).

On the more institutional side the author has, in general, written well. He espouses the use of investment funds and of formula plans, being particularly interested in variable stock-bond ratio plans based upon both stock-price and non-price indexes. Professional management of portfolios is described, but individual management is advocated, particularly for small funds. The author claims that most banks will not handle investment supervisory accounts of less than $100,000 except through common trusts. The latter are analyzed once a month, he states, and the former only once or twice a year (p. 524).

The sections of the book dealing with security selection appear to this reviewer the least satisfactory on two scores. The author's over-simplification of financial analysis leads to unfortunate statements ("the accountant is interested in knowing the exact account value," p. 245) and the adoption of inconsistent methodology since he adopts book values as a major factor in

security prices and then uses the prior-deductions method of calculating coverage of preferred stock dividend requirements, but an over-all method for computing book values. Incidentally, equipment trust certificates are not interest-bearing, nor secured by rolling stock, as the author states (p. 159). A second drawback appears to exist in the complicated method of security selection, starting with an idea for purchases derived from businessmen, brokers, bankers and others, the collection of data from financial sources, supplemented with calculation of ratios and interviews with company officials(!) The reviewer believes that such procedure would tend to scare potential investors, rather than encourage them—especially the small investor for whom the book was written.

The inclusion of materials on how to read the financial page and an appraisal of rating services are interesting and valuable additions. Yet, the reader might wish that Professor Kamm, who writes so well and has an authoritative background, had attempted a somewhat more sophisticated level for his initial text in this field.

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Personal Finance. By JOHN A. LEAVITT and CARL O. HANSON. (New York: McGraw-Hill. 1950. Pp. ix, 374. $3.50.)

This newest text for the increasingly popular course in Personal Finance is written in a more attractive style but contains less meat than others. The twenty chapters cover the usual range of topics presented in such a course, with a chapter on business law added at the end. The authors have aimed at brevity and quite properly disclaim any attempt to present an exhaustive treatment of these topics. Unfortunately, however, the discussion of certain subjects is not only brief but superficial. For example, all types of securities—government bonds as well as corporate bonds and stock—are treated in a total of fifteen pages.

The authors have been quite forthright in expressing their own opinions and offering the reader practical advice with regard to each of the topics covered, and in the judgment of the reviewer nearly all the advice given is quite sound. The questions which follow each chapter are of the "thought" type and should provide a good basis for interesting class discussions. There are no references, bibliographies, or suggested readings.

The book as a whole suffers from a lack of organization, showing little logic in the sequence of chapters. For example, charge accounts and installment buying are discussed in Chapter 2, but the treatment of consumer borrowing is postponed to Chapter 9, where it intervenes between a chapter on savings institutions and another on savings instruments. The formula for computing the interest rate is presented in connection with installment loans in Chapter 9 but is not used in the earlier chapter on installment sales.

The book suffers also from some unfortunate misstatements of fact, such as the definitions of "restricted" and qualified endorsements on page 95, and the statement on page 230 that an annuity contract contains some element of

insurance and differs in only minor respects from an endowment policy. On page 261 the reader is given the impression that it is always cheaper to own than to rent a home and that it is not necessary to include any allowance for depreciation in the cost of owning a home. The book was written before the recent revision of the Social Security Act, but the illustration used on page 242 shows a misunderstanding of the method of computing the "average monthly wage" under the old law. There is no mention of state payroll taxes for unemployment insurance or of the 90 per cent credit provision of the federal tax.

The chapter on budgeting presents a very realistic and practical view of the subject, but is defective in its failure to maintain a clear distinction between the budgeting and record-keeping aspects of personal finance. The authors take a courageous position on endowment insurance and other policies with investment features, but do not present enough material to convince the reader of the soundness of their conclusion or to enable him to defend it against the first insurance salesman he encounters.

In short, the book contains useful information and ideas and good practical advice for the general reader who has not been educated in financial matters, but in the reviewer's judgment does not contain enough material for a college level course.

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Public Finance

Fiscal Policies and the American Economy. Edited by Kenyon E. Poole. (New York: Prentice-Hall. 1951. Pp. x, 468. $4.75.)

This volume, which analyzes the theoretical, monetary, and institutional aspects of fiscal policy in a series of nine essays, each written for it by a different contributor, is a useful addition to the extensive literature in this field. Although the technical competence displayed in the essays is high, the book contains only one new contribution, the chapter on the redistribution of income through the fiscal system. Its main value lies in its examination of fiscal instruments in relation to the institutional framework of the American economy, a direction of emphasis which some readers may regard as constituting an additional contribution.

The subjects covered by the chapters are extensive, ranging from a broad history of federal public finance policies to the international aspects of fiscal policy. They include the significance of public debt to the economy as a whole and financial institutions, the effects of fiscal policy on employment and the price level, the significance of government expenditures, and a review of the tax system. Although the use of economic analysis, as compared to description and factual detail, varies considerably among the chapters, it is, in general, neither neglected as a tool nor applied as a *tour de force*. The various chapters supplement each other very well with a minimum of duplication, and cross references to various topics discussed in the chapters have been fre-

quently inserted. In addition, annotated references for additional reading are listed at the end of each chapter.

Nevertheless, as judged by the extent to which it fulfills its purpose, the book has limitations, some of which are important in the opinion of the reviewer. According to the editor's preface, the purpose of the volume is to help the reader explore the ramifications of fiscal policy in its theoretical, monetary, and institutional aspects. Evaluating the product in terms of its purpose, these limitations stand forth:

1. The basic theoretical issues involved in fiscal policy analysis are not adequately presented. In their simplest form these involve an appreciation of the static equilibrium relations between the commodity markets, the money and capital markets, and the labor markets and the consequences of various fiscal measures for these relations. Adequate discussion of these points would have aided the nonspecialist reader in understanding the ramifications of fiscal policy theory and comprehending the significance of empirical information and institutional practices for fiscal policy.

2. Although many comments are scattered through the book on the results of fiscal policy formation, the policy-forming process itself is inadequately developed, especially for government expenditures and taxes. Some attention to the institutions through which fiscal policy is formed would seem to be justified in a symposium of this type.

3. There is little technical discussion of federal excises, payroll, estate, and gift taxes, and very little discussion of alternative types of federal taxes, such as a general sales tax. The first three are important sources of revenue, and all are very closely related to the central issues of fiscal policy.

4. The relative merits of areas in which public investment might be fruitfully undertaken are almost neglected. This field is evidently important for fiscal policy.

The first limitation seems to this reviewer to be of dominant importance. While these criticisms apply, directly or indirectly, to several essays in the collection, they are not intended as comments on the chapters to which they refer, but rather as comments on the book as a whole.

Considering the merits and limitations of the volume, as outlined previously, its chief appeal will be to the nonspecialist, although specialists will find a few rewarding chapters. Lay readers will find it hard going in many places. It is a very good book for use as reading in fiscal policy in graduate as well as undergraduate courses in economics.

The first three chapters are intended to be read first and in sequence; the remaining chapters may be taken up in any order. The first, "Background and Scope of American Fiscal Policies" (Kenyon E. Poole) is an interesting and nontechnical survey of the extent to which federal financial activities can be utilized for economic stabilization. Its main conclusions, that the increasing rôle of government both increases rigidities which enhance the difficulties of applying fiscal policy for stabilization and lessens the need for such policy, are not clearly developed from the discussion, a large part of which is historical.

Roland I. Robinson's contribution, "Monetary Aspects of Fiscal Policy," is a well-done analysis of the (1) relations between monetary and fiscal policy,

(2) areas of agreement and conflict between monetary and fiscal policy, with emphasis on conflict, and (3) effectiveness of monetary policy as an instrument of stabilization. However, the main issues of analysis are only partially developed in the sections devoted to the force of monetary policy, and some of the conclusions are shrouded in uncertainty. For example, the reasons why credit restraint only becomes effective at the risk of becoming too effective, thus precipitating a decline in business activity, are not clear (pp. 80-82). There is no discussion of the fact that credit restraint limits the *eventual* inflationary price rise, even if investment and savings are interest inelastic, unless there are no limits to the velocity of circulation of money. Nevertheless, this provocative essay is one of the best in the book.

Henry M. Oliver's essay, "Fiscal Policy, Employment, and the Price Level," is a good summary of the economic effects likely to follow from the use of fiscal instruments in economic stabilization, taking account of certain rigidities and behavior patterns which seem to be characteristic of the modern American economy. However, many important theoretical issues either are not presented or are hidden in the argument, and the chapter falls somewhat short of being an adequate discussion of the theory of fiscal policy, which is its function, according to the preface. For example, there are few clues as to why price flexibility would prevent unemployment (pp. 149-50). Liquidity preference is only referred to in a footnote (p. 114). The "Pigou effect" is not mentioned.

The chapters entitled "Debt Management" (Henry C. Murphy) and "Financial Institutions as a Factor in Fiscal Policy" (Harry G. Guthmann), both devoted to problems of the public debt, supplement the earlier essay on monetary aspects of fiscal policy. Henry C. Murphy's essay is a good presentation of the meaning of debt management, certain factual data concerning the public debt, and postwar as well as future debt problems, but one of his conclusions is not true without extensive qualification. The statement that substantial reduction in the public debt would unduly depress the economy, because it requires that private capital formation exceed private savings by the amount of annually retired debt, thus imposing an *additional* burden on investment outlets (p. 199), is only true when the taxes imposed for debt retirement reduce *consumption*. If such taxes largely reduce *savings*, taxes expand at their expense, and the investment required to sustain full employment is no greater than in the absence of the higher taxes for debt retirement. In addition, there are other considerations which influence the result.

In addition to presenting a good analysis of the liquidity needs of the major financial institutions in the money and capital markets with special emphasis on public debt, Harry G. Guthmann's contribution shows the relation of monetary policy and debt management to the practices of these institutions and economic events in general.

"Government Expenditures and Their Significance for the Economy" (John F. Due) contains a refreshing fusion of factual data on federal, state, and local expenditures, their economic significance, optimum expenditure levels and patterns according to principles of welfare economics, and an evaluation of the extent to which actual expenditures are determined in accordance with these principles. Although the reader may criticise certain parts of the essay,

such as the author's conclusions as to the most satisfactory measure of the importance of the governmental sector (p. 223), it is in general a very good discussion.

There is more in the chapter "Repercussions of the Tax System on Business" (E. Gordon Keith) than is suggested by its title, for the term "repercussions" has been broadly interpreted to cover a variety of ways through which business is affected by taxation. On the other hand, the essay is largely concerned with the federal taxes on individual and corporate incomes; it avoids detailed examination of other federal taxes on the grounds that they are less important revenue sources and do not affect business decisions so directly.

In this well-written essay the author covers the objectives of tax policy, the effects of current federal taxes on business practices, price and wage policies, and investment, and some proposals for reform. Considering the paucity of evidence as to the effects of taxes, his conclusions that the corporate and personal income taxes taken together discourage equity financing, weaken investment incentives somewhat, and reduce the supply of risk money seem sound. However, he does not extend his analysis to venture an opinion as to the important question of the over-all change in investment which would occur if those taxes which hit savings were replaced by taxes on consumption. From the discussion it is not at all certain that there would be a significant change. Within its scope, the essay is a valuable one.

"The Fiscal System, the Distribution of Income, and Public Welfare" (John H. Adler with an appendix by Eugene R. Schlesinger) combines, for federal, state, and local levels of government, prior methods of estimating the immediate burden of taxation by income classes with similar methods, applied for the first time, of estimating the immediate benefits of government expenditures and presents esimates of the redistribution of income from the fiscal system for 1938-39 and 1946-47. According to these estimates, if account is taken of the change in the distribution of income and certain statistical adjustments, the pattern of the redistribution of income in 1946-47 was very similar to that of the earlier period. In addition to outlining briefly the statistical techniques used, the paper discusses the conceptual problems and from its findings draws conclusions, some of which are very dubious, as to their significance for fiscal policy. A large number of problems, starting with the significance of the concept of immediate benefit and burden (incidence), are raised by this essay, which examines a very difficult problem with speculative techniques. Nevertheless, it contains many illuminating insights and worthwhile observations.

The concluding chapter, "International Aspects of Fiscal Policy" (Frank W. Fetter), is largely a history of the relations between American fiscal policy and international economic relations with liberal doses of monetary history and a statement of possible future implications of American fiscal policy and international economic policies.

Both the editor and collaborators should be congratulated for producing an interesting, readable, and very worthwhile book.

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Report on Japanese Taxation by the Shoup Mission. 4 vols. By Carl S. Shoup *et al.* (Tokyo: GHQ, SCAP. 1949. Pp. iv, 400.)

Second Report on Japanese Taxation by the Shoup Mission. By Carl S. Shoup *et al.* (Tokyo: Japan Tax Association. 1950. Pp. 92. ¥250.)

When the Shoup Taxation Mission went to Japan in 1949, the Occupation and the Japanese government had just wounded Goliath mortally with a slingshot, and wrecked the slingshot. They had checked a rampant inflation with a patchwork tax system, compounded of Japanese and American practices with liberal additions of chewing gum and baling wire. But the effort and strain had disclosed for all to see the weaknesses of this patchwork system. To raise the aggregate amounts required to check inflation, a bewildering multitude of direct and indirect taxes were in force. At the center of the national tax system were self-assessed taxes, chiefly on incomes. But on these taxes arbitrary mass reassessments were carried out periodically at wholesale, as each local tax office strove to meet or exceed its quota of collections. Honest and dishonest suffered alike, and taxes were collected in the presence of armed Occupation troops, almost literally at gun-point. Widespread evasion was met with widespread extortion, and accompanied by widespread corruption of the underpaid tax personnel. The tax collector had replaced the policeman as the nation's bogey; "bad taxes" were a main economic talking point of the Japanese Communist Party. Capital accumulation, either individual or corporate, required tax evasion almost as a *sine qua non*. The Occupation had imposed upon prefectural and local governments the bulk of the cost of educational, health, and social welfare services on a scale previously unknown in Japan. Completely incapable of financing these activities, the localities were dependent on hand-outs from the capital and on "voluntary" contributions of a completely unbudgeted and extra-legal nature.

The people's hatred for the previous system provided the Shoup Mission with an opportunity rarely accorded a team of technical specialists—a respectful populace willing, even eager, to listen to what they had to say. The Mission's aloofness and isolation was also in its favor, since both SCAP and the Japanese government were hamstrung by internal wrangling between economic pressure groups. Also beneficial was the certainty that their program would go into force virtually unchanged, despite the trappings of Japanese democracy, after General MacArthur gave it his official blessing in September 1949. But along with the opportunity went the difficulty of prescribing institutional change in an unfamiliar institutional setting. Dr. Shoup and his party spent only three months in Japan on their first visit (1949), and only six weeks on their second (1950). Neither Shoup himself nor the bulk of his staff had previous experience in the Orient. Rarely has the attempt been made to build so much of Rome in so little more than a day.

The Shoup Mission suggested, and the Japanese Diet enacted, an almost complete overhauling of the Japanese tax system. The changes advocated, and the reasons for their advocacy, make up the text of both the Shoup *Reports*. The earlier *Report* contains in its first two volumes an excellent small-scale treatise on fiscal theory pure and applied. The remainder of the first report, and the great bulk of the second, is concerned with administra-

tive matters of minor interest outside Japan. The text is in both English and Japanese, on opposite pages. This reviewer knows of no better text for students seeking a working vocabulary in financial Japanese.

The principal changes advocated by the Shoup Mission can be summarized under five main heads.

1. Top-bracket income tax rates were reduced from 85 to 55 per cent to encourage private capital formation. A tax on net worth (assets) of the wealthiest Japanese was adopted at the same time, to prevent tax avoidance by holding capital idle.

2. Corporate income and excess-profits taxes had been devouring funds which should have gone for capital replacement; depreciation allowances were based on prewar prices and completely inadequate to accomplish their purpose. The Shoup system repealed the excess-profits tax and allowed for the revaluation of assets on the basis of 1950 prices. Over-revaluation was checked by a "revaluation gain tax."

3. Local governments were given a greater degree of fiscal autonomy by increasing the revenue sources available to them. One of these was a broader property tax, including for the first time industrial machinery along with real estate. Another was a sales tax, based on "value-added." In addition, standards were set up for the distribution of Central Government aids. This reform was designed to reduce the arbitrary element in inter-governmental fiscal relations.

4. A number of regressive and burdensome commodity excises were repealed, the most important being a 40 per cent levy on all textile consumption, and a transactions tax which pyramided badly and handicapped small firms competing with larger ones.

5. A revised system of tax administration was outlined, with special reference to income taxes. Taxpayers keeping books in standard form were to be exempt from mass reassessments. The "quota system" of collections was abolished. Trained investigators were to audit taxpayers' records. More severe penalties were to be inflicted on tax dodgers. "Collective bargaining" with taxpayers was to be abolished. The number and remuneration of tax personnel was to be increased, and higher standards enforced as regards both competence and honesty.

Nevertheless, perhaps because their advance hopes had been raised too high, many Japanese were disappointed by this report and by the 1950 legislation. The "Shoup tax system" did not reduce over-all taxes to anything like the extent expected. Much of the reduction was at the expense of higher food prices, since food subsidy payments were cut as well. On this basic point, however, the Mission was hemmed in. It was hemmed in by requirements for a super-balanced budget, for support of the Occupation on a standard midway between America and Hollywood, and for maintenance of the educational, police, health, and welfare services on an Occidental scale. The Shoup system was also probably slightly less progressive on balance than its predecessor, when coupled with the lowered subsidies on food. Private capital formation is difficult to secure by tax favors, when it is inhibited mainly by fears of Communism, fears of war, and fears of foreign barriers against

Japan's exports. The lessening of administrative rigor and unfairness had, at least temporarily, an unfortunate result on income tax collections; the proportion of the total paid by the workers in payroll deductions rose sharply, and the income tax seemed on the point of degenerating to a payroll tax. At the same time, Japanese public opinion seemed wedded to its traditional views of direct taxation and local autonomy. The first was a form of tyranny, and the second a throw-back to the feudalism of the Shogunate.

It will be interesting to see what the Japanese government will do to the Shoup reforms after the Peace Treaty restores it full freedom of action in the domestic economy. Grapevine rumor from Tokyo is pessimistic as this is written (Fall 1951). Plans seem under way to eliminate the net worth tax, and to reduce the local governments to their historical position of financial dependence on Tokyo. There may well continue the whittling away of the income tax to a payroll tax with an income-tax façade. On the other hand, departure of the Occupation may lead to substantial reductions in expenditures despite partial rearmament. From these reductions, the lower classes may obtain the major tax benefits. (Indeed they should, on "benefit" grounds, for these expenditures were mainly designed to assist them.) The course of post-Occupation Japanese taxation, and indeed Japanese finance in general, should prove a fascinating study for economists and historians of both America and Japan.

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The Corporation Income Tax. By RICHARD GOODE. (New York: John Wiley and Sons. London: Chapman & Hall, Ltd. 1951. Pp. xiii, 242. $3.00.)

Although enacted several years before the modern personal-income tax, the corporate-income tax remained for three decades essentially ancillary to it. But in the middle 'thirties, it began to take on fiscal importance that became reflected in the economic literature. During the last decade interest has heightened considerably. Besides monographs on various aspects of the tax by Butters, Lintner, Lent, Gillim, Groves, Vickrey, Kimmel, and others, we have had a growing periodical literature, and important studies and reports by government agencies and private research groups. The present work[1] by Richard Goode brings to a culmination these earlier works; it represents the definitive general treatment of the corporation-income tax.

Goode breaks his study up into three major parts. In the first section (Chaps. 2 and 3) he considers the suitability of the corporation as a basis for taxation. This discussion leads through the labyrinth of theories of benefit, allocation of social cost, social control, ability to pay, etc. He finds (p. 43) that such criteria provide, "somewhat inconclusively," a basis for the taxation of corporations.

[1] This recent monograph should not be confused with his earlier study—*The Postwar Corporation Tax Structure*—made in 1946 for the U. S. Treasury Department, Division of Tax Research (now Tax Advisory Staff). This early study was primarily concerned with techniques of eliminating the "double taxation" of dividends.

This type of discussion is standard fare in the corporate-tax field. If it must be done, my man to do it would be Goode. But it seems to me that all this leads up a blind alley. For, suppose that one of these criteria provided a basis for corporate taxation. What then? Does it follow that we would rush in with a tax on corporate income? Only if it resulted in a smaller decrease in welfare or in a better distribution of income than its alternatives should its enactment be urged. Thus, nothing is really settled here by ability-to-pay or benefit theories.[2]

The meat of the book is found in its second part (Chaps. 4 through 8) which deals with the effects of the tax on prices, incomes, and the distribution of income and wealth. This section is ushered in by a chapter on the "incidence" of the corporate-income tax. It contains the standard analysis of the short-run incidence of the tax[3] and the novel view, in modified form, put forth by Goode in 1945 on long-run incidence.[4]

Goode concludes that the short-run incidence of the tax is on profits, except in the case of monopolists and quasi-monopolists who were not previously exploiting their markets. In the long run, he finds that the tax will not increase the *general* level of prices unless it increases effective demand—an unlikely possibility. But "whatever its effect on the general level of commodity prices, the corporate tax in the long run will probably increase the relative prices of commodities in whose production the corporation form is especially advantageous"[5] (p. 72).

In the balance of this section Goode works out the effects of the corporate tax on the distribution of wealth and on national income. Throughout, he attempts to give quantitative answers to these key problems. He finds the tax to be progressive (Chap. 5), to have less adverse effect on consumption than alternative taxes (Chap. 6), to have more adverse effect on investment—and here he recognizes that no precise figure can be confidently placed on the amount (Chap. 7), and, on balance, to have less adverse effect on national income than its alternatives (Chap. 8).

Goode's approach in this section has many virtues. He weaves together the effects of the tax on prices with its effects on aggregate demand for goods and services. He compares the effects of this tax with that of others—an important and difficult job which Goode has done carefully.

I have certain qualms about the results in this section, nevertheless. Goode

[2] Notice that such theories have also been used as justifications of value-added taxes and even franchise taxes on corporations and other business enterprises.

[3] Many authors could be cited to support this statement. For a recent example, see J. Fred Weston, "Incidence and Effects of the Corporate Income Tax," *National Tax Journal*, December, 1949.

[4] "The Corporate Income Tax and the Price Level," *American Economic Review*, March, 1945.

[5] Goode's distinction in his long-run analysis between the effects of the tax on the *general* price level and on *relative* prices is a welcome one. In his earlier study he had blurred this distinction through his heavy emphasis on the effects of the tax on aggregate demand, and his position was somewhat unclear. Bowen's criticism ("The Incidence of the Corporation Income Tax: A Reply," *American Economic Review*, March, 1946) seems now largely accepted by Goode.

follows out only one assumption—the extreme one—derived from the short-run analysis that the whole tax falls on profits. This causes him some uneasiness;[6] but he sees no clear indication that other assumptions would be more useful or more accurate.

The trouble is that short-run analysis turns on the alleged fact that the corporate tax does not affect marginal costs. Plant, it is argued, is fixed in the short run, hence no interest return for it is included in marginal costs. But, what of the return for *variable* or working capital that does vary with short-run output changes? In principle, the same implications with regard to tax incidence should be drawn from short-run working-capital changes as Goode draws from long-run changes in total capital.

Moreover, even with this qualification, it is doubtful that conclusions based on short-run analysis are the proper ones for Goode's purposes. True enough, tax legislation to cut back effective demand within a given year should be based primarily on the more immediate effects of the tax. It is cold comfort, indeed, to know that investment will drop back sometime or other in the future. Nevertheless, continuance of the tax, despite its initial rationale, would necessitate an examination of its long-run effects. Forces that produce the long-run effects take hold quickly and are pushing their way past the initial short-run situation. Thus, effects on the distribution of income, for example, soon become long-run rather than short-run ones. Moreover, a step up in the tax means that, perhaps, a large portion of it has been in operation for some time. The tax slate is never wiped completely clean; we cannot proceed as if there were no taxes on the books at the beginning of a period.

If our criticism is sound, it might have been preferable for Goode to have shown a range of the possible tax effects, or several alternatives. Slight changes in assumptions can make significant changes in the distribution of the corporate-tax burden, as Musgrave has shown.[7]

The last section of the book is somewhat more technical. It deals with the economic effects of different methods of defining taxable income—*e.g.*, inventory valuation, depreciation, interest and rent (Chap. 9)—and of different methods of eliminating "double taxation" of corporate profits (Chap. 10). These chapters are able treatments in short compass of difficult subjects.

Goode's summary chapter (11) appraises the corporate tax by developing his tax criteria and weighing the tax against them. He finds that the corporation tax is our second-best tax, second only to the personal-income tax. I especially commend to the reader the explicit way in which he handles his value judgments. He faces directly the problem of whether the tax system should encourage more consumption and less investment, or vice versa. Regardless of whether or not you agree with the position he takes, you cannot but applaud his effort to bring all of his assumptions out into the open.

This book will rightly become the standard work on the economic effects

[6] "The critical reader will recognize that this assumption is not definitely supported by the findings of the preceding chapter and that indeed it is to some extent inconsistent with them" (p. 75).

[7] See R. A. Musgrave, J. J. Carroll, L. D. Cook, and L. France, "Distribution of Tax Payments by Income Groups: A Case Study for 1948," *National Tax Journal*, March, 1951.

of the corporate-income tax. It will prove indispensable in fiscal-policy courses that want to give the student a model of tax analysis, not solely one for the corporate tax. Goode's breadth, judiciousness, and craftmanship make this an impressive study.

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International Economics

World Trade and Investment. By DONALD BAILEY MARSH. (New York: Harcourt, Brace and Company. 1951. Pp. xxii, 594. $6.75; text ed., $5.50.)

World Trade and Investment represents a remarkable combination of intensive theoretical reasoning and a realistic presentation of current institutional patterns of economic activity. Professor Marsh has written more than a textbook which merely brings together the material that a student is expected to know about a particular field. He has provided at many points a new synthesis of the latest developments in national economics with those in international economics, to the considerable benefit of both. For example, he has related national income accounting to balance-of-payments accounting and has shown how the two systems may be reconciled. In his presentation of the foreign trade multiplier, he combines the more advanced closed-system multiplier analysis with an analysis of changes in the foreign balance. Again, the theory of international values is developed through the application of Hicks's indifference curve apparatus. While the author employs theoretical reasoning in his excellent discussion of current policy problems, the reviewer cannot help feeling that most of the beautifully designed tools which the economic doctor carries in his kit when he goes out of the classroom to diagnose and prescribe for the world's economic ills are never used.

World Trade and Investment is divided into three books which, as the author suggests, might be used independently in teaching. Book I is a survey of international trade and capital movements, largely descriptive in character. Book II is concerned with income and balance-of-payments accounting, a description of the foreign exchange market and the theory of its operation, the foreign trade multiplier, and the theory of international values. There is a discussion of both the price and the income effects of exchange depreciation, but in the opinion of the reviewer the section on demand and supply elasticities is deficient both in clarity and in the development of the full implications of exchange rate changes. Moreover, this is a case in which the author could have employed his theoretical techniques to greater advantage in analyzing the exchange rate problems of the postwar period which he takes up in Book III.

Professor Marsh divides his discussion of the theory of international values into two parts: (1) a two-country, two-commodity analysis in terms of the indifference curve technique, and (2) the theory of general equilibrium. Dr. Marsh does a good job in showing the relationship between the partial equilibrium and the general equilibrium approaches and in analyzing the problem of

real costs versus general equilibrium. This theoretical treatment would have been more useful and meaningful to the student, however, if the author had devoted more attention to the relationship between his theory of international values and the actual money prices and exchanges rates in the market. The final chapter of Book II deals with the impact of monopoly and monopolistic competition on international trade. In this chapter the author also discusses the use of the tariff as a means of securing the optimum terms of trade.

In Book III, Dr. Marsh takes up certain major international economic policy issues, including the problem of dollar shortage. The author's approach is largely in terms of the operations of institutions designed to deal with these problems. The descriptions of the European Recovery Program and of the International Monetary Fund are excellent. Rather than the usual superficial description of these organizations, he presents a penetrating and realistic analysis of their functions. A systematic discussion of exchange control devices, particularly of multiple exchange rate systems, is lacking, however. The discussion of comercial policy is confined to a rather pedestrian outline of the ITO Charter, which now seems to have little more than historical significance. While the unhappy fate of the ITO Charter could not have been known to the author at the time of writing, it is to be regretted that more attention was not paid to the operations of the General Agreement on Tariffs and Trade. There is little discussion of the tariff issue or of the wide variety of commercial policies and practices. The last four chapters are concerned with international investment and provide a good account of the scale and pattern of direct investment together with an analysis of the operations of the Export-Import Bank and of the International Bank for Reconstruction and Development. While the conditions for successful international investment are set forth, the book lacks a discussion of the theory of economic development in its broadest aspects.

The contributions of this book far outshadow its deficiences as a text. Moreover, these deficiencies can readily be overcome by supplementary material, particularly in the field of commercial and foreign exchange practice and policy. While the author suggests that this book is suitable for a one-semester undergraduate course, the reviewer would regard this as an exceedingly difficult pedagogical feat, unless the instructor were dealing with a group of students already well grounded in the theoretical techniques which Professor Marsh develops in Book II.

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The Customs Union Issue. By JACOB VINER. (New York: Carnegie Endowment for International Peace. London: Stevens & Sons Ltd. 1950. Pp. viii, 221. $2.50.)

"It is a strange phenomenon which unites free-traders and protectionists in the field of commercial policy, and its strangeness suggests that there is something peculiar in the apparent economics of customs unions. The customs union problem is entangled in the whole free-trade-protection issue, and

it has never yet been properly disentangled" (p. 41). The heart of Professor Viner's essay is the most cogent analysis of the economics of customs unions to be found in the literature. But this means perhaps only that the book was written by Jacob Viner.

Viner resolves the paradox by showing that actual situations may differ so much that customs unions may have either protective or free trade results. Suppose, he points out, the customs union leads to a re-direction of trade of the one partner from the cheaper outside world to the more expensive neighbor? This is a result which a free trader hardly can approve. Or suppose that the combined tariff of the new customs union is the highest of any of the partners? This too is hardly in the direction of freer trade. But it explains why protectionists may find customs unions attractive.

In this respect customs unions may be simply discrimination against the outside world carried to its logical conclusion. But these are not necessarily the results. It may, after all, be just as likely that a customs union leads not only to imports from a cheaper source, but also to a re-location of industries in more efficient places. In fact "the larger the economic area of the customs union and therefore the greater the potential scope for internal division of labor," the more likely is a customs union to operate in the free trade direction (p. 51).[1]

But this is the rub. To get the benefits of free trade, a price has to be paid in the form of a different division of labor. It is, of course, possible that the growth of foreign trade is so great that the change in the division of labor affects only as yet nonexistent firms, but leaves old firms unaffected. If not, the existing firms will resist the union, either directly or indirectly. Viner discusses this point among others in a section on "Cartels and Customs Unions" (pp. 75-78).

The recent discussions of the so-called Schuman plan make his point abundantly clear: the difficulties over the high-cost Belgian coal mines and the objections voiced by both German and French steel producers based on their (mutually exclusive) fears that each may be undersold by the other, and worse, that the realization of the Schuman plan would lead to a re-location of the steel industries in each other's territories all indicate that the respect paid to customs unions and related arrangements is mostly lip service or has political foundations.

Because "economic planning has made trade barriers protective of more than allocation of resources and has thus made their removal a much more delicate and economically debatable matter" (p. 138), Viner sees in customs unions neither "a practicable nor suitable remedy for today's economic ills" but rather "a psychological barrier to the realization of the more desirable but less desired objectives . . . the balanced multilateral reduction of trade barriers on a nondiscriminatory basis" (p. 139). In this everyone will agree with him. When everything is said it seems very much easier just to reduce trade barriers than to create customs unions which—as long as there is unwillingness to let trade be really freed—bring with them a host of new and worse

[1] Professor Viner conveniently summarizes his findings in seven points on pp. 51, 52 of which the quoted point is the first.

problems. Furthermore, it is really no more difficult to include more than to include fewer countries in a freer trade grouping, though this is not necessarily so for a customs union.

The Benelux agreements have to this day not become a living reality in spite of the fact that the political preconditions have been exceptionally favorable. And Professor Viner's analysis, together with the balance-of-payments difficulties of the Dutch pointed out by Professor Meade,[2] gives no cause for optimism in the future.

I find it impossible to accept one minor statement by Viner on the political aspects of customs unions, but even this criticism only serves to strengthen what Professor Viner has to say. "Customs unions have not been formed at random. . . . Small countries, when they have any real freedom of choice . . . stay out of customs unions with powerful neighbors unless there are present special circumstances. . . . The case of Austria in 1931 would appear to be the only modern case where any country valuing its independence has nevertheless shown readiness to risk that independence for economic reasons, but Austria was acting from economic despair" (pp. 104-105).

The point is, of course, that Austria did *not* value her independence. In fact, German Austria had tried to join Germany in 1918-1919 and the *Anschluss* was, in the days before Hitler, popular not among the nationalists on either side of the border, but among social democrats. Some laws were already identical in Austria and Germany, and others like the criminal code were about to be unified when Hitler came to power. Austria was indeed economically desperate, but the case is not an exception to Professor Viner's rule.

There seems to be no easy way out of the dilemma that the economic benefits of customs unions can be had only at a price, and that this price not only includes shifting of industries and sources of supply, but also giving up of political prerogatives of planning. It is quite possible that the threat of Soviet domination of Western Europe may make the Europeans willing to pay the price, but even here the impetus for any unification will have to be political.

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[2] J. E. Meade, "The Removal of Trade Barriers: The Regional versus the Universal Approach," *Economica*, May 1951, pp. 184-198. Professor Viner also discusses balance of payments difficulties, but not as extensively as might perhaps be wished. However, Professor Meade's point is that fluctuating exchanges, and possibly only they, would make freer trade possible.

Policy for the West. By BARBARA WARD. (New York: W. W. Norton. 1951. Pp. viii, 317. $3.75.)

Miss Barbara Ward, until recently the distinguished foreign editor of the London *Economist*, has written a tract for the conduct by the West of cold war with Soviet Russia. It is by no means a tract for professional economists; nor is it mainly an economics tract. Miss Ward argues eloquently that the West frets too much over economics—over inflation, standards of living, and

what we can afford—while our enemy, hypocritically but effectively, poses as the champion of peace and idealism. The qualities we need most to supplement "containment" are faith, hope, and poetry.

The non-economic parts of the tract are first-rate journalism—lively, well-informed, stimulating and usually persuasive. Her thinking on political strategy is based on her conviction that the Politbureau will ruthlessly exploit any positions of weakness if it thinks it can do so with impunity. But history tells us that Russia does not start major wars; it does not risk its own destruction. "The policy of containment may make formidable calls upon Western resources and Western patience, but insofar as it is given to us to see the future, it offers a chance and a hope of peace."

Miss Ward summarizes the "material" part of her program on page 189: (1) build an effective system of joint defense (the problems here are not discussed at length, but boldness is urged: "In fixing our defense budget it would be folly to err on the modest side"); (2) maintain economic "stability and expansion" in the United States and Europe; (3) initiate a systematic and much more ambitious effort to raise the standards of backward peoples, especially in Asia.

To help achieve these objectives, including surprisingly the third, she advocates a strengthening of the Atlantic Pact machinery, with a full-fledged Combined Chiefs of Staff, a Joint Production and Resources Board, and an Economic Development Board. These are all examples of the practical, partial, functional approach to federalism which Miss Ward prefers, but she gives the impression of slurring over difficulties. Her constant references to the wartime Combined Chiefs of Staff and Combined Boards are misleading: these were two-power boards, and the differences between two-power and multi-power boards are differences in kind. Nor does she consider how sensitive Asiatics will react if responsibility for their development is placed under an Atlantic Council of "imperialist" (or ex-imperialist) powers.

The economics content of the book is largely confined to certain chapters in Parts II and III ("Strength" and "Unity"). They are in many respects her weakest and least satisfactory chapters. Miss Ward's brand of economics is considerably less rigorous than that of *The Economist*, and several degrees closer to the *dirigisme* of Mr. Balogh.

She is very concerned to prove (obviously to the American reader) that a certain amount of national and international economic planning by governments is now essential. Much of what she has to say about structural changes in the world economy since the 19th century, "when self-regulating economic forces worked," is relevant and important, although all will not draw the same moral for policy. Unfortunately, she spoils her effect for professional economists by a sophomoric attack on the law of comparative advantage. She does not demarcate clearly the areas within which she considers government planning to be necessary. She is most concerned with "Keynsian" problems of matching aggregate demands and supplies in a stable fashion over time, but she also wants to insure "reasonable balance" in the international accounts of each nation and area, and there is a good deal of evidence that she looks with favor upon the planning of specific industries. The general tone of Chap-

ter 18 and in particular her lyrical and uncritical discussion of the Schuman Plan give the impression that Miss Ward objects to past cartels mainly because they have been too narrowly and nationally conceived.

Miss Ward devotes a conventional chapter to the control of inflation. On the whole, however, she gives the impression of being little worried by inflation: it created havoc after World War II largely because of our ignorance, but we now understand its causes and cures. In the following chapter ("More Wealth") her contempt for the inflationary danger is confirmed. Defense requirements, she thinks, only amount to 15 per cent or at most 20 per cent of the Western Powers' national incomes. If we could increase our productive resources by 20 per cent, we could meet these requirements with no painful diversion from consumption and with little risk of inflation (once we are over the "hump"). And this kind of spurt in output is possible in the United States, Miss Ward argues, as during World War II, even though we are now fully employed. All that is necessary is to finance the defense effort and the aid program "on the same generous scale" and in addition "see that the necessary capital expansion takes place at once." Elsewhere, however, she berates the British Labor Government for having kept the British economy on the brink of inflation since the war by its attempt to achieve everything possible and desirable at once. And here she admits that other countries cannot follow the policy she recommends. There are constraints, it seems, which force a choice between guns, machines, and butter everywhere except in the United States. This is a flattering view of the U. S. economy, but not necessarily a scientific one.

There are other objections to pressing the "hump" theory too far, and no one has stated them better than Miss Ward. In Part I she warned that "we shall certainly fail unless our effort is at once sustained, calm, and supremely positive," for the threat may be with us for decades or generations. In Part IV she reminds us again that "holding the frontiers of freedom may be a permanent feature of our civilization—as the Roman frontier endured through hundreds of years." This kind of sustained effort, she says, is very difficult, very unfamiliar, and very uncongenial to impatient Western democracies. But in between Parts I and IV Miss Ward becomes impatient too. She is prepared to risk inflation for a spurt. She, like the Labor government, wants all desirable things at once. Undoubtedly a certain amount of humping is necessary to get adequate armed forces in being quickly, but the problem is one which needs calm examination by economists and social psychologists. To me the Ward program seems psychologically wrong.

In the longer run, after her hump, Miss Ward believes that our great problem will be the maintenance of economic stability, particularly the internal stability of the United States. Her discussion is a plea for planning and action along Keynes-Hansen lines; it is marred by some political naïveté and a grossly optimistic assumption of our ability to predict the size of prospective deflationary or inflationary gaps. The important international aspect of long-run stability is, to Miss Ward, the closing of the dollar gap. She tries to face squarely the view that it could be closed by an appropriate adjustment of exchange rates. But after some highly questionable argument

against devaluation, it becomes clear that her implicit comparison is with a third alternative: that the United States itself close the gap by grants to backward areas, by military orders placed abroad, or by other measures recommended in the Gray Report.

Miss Ward is concerned with the difference in the climate of economic opinion in Britain and the United States. She thinks that the American view and the British view are both partly right and partly wrong. Americans are right in insisting that efficiency, productivity, and expansion depend upon "the often despised" economic forces: the British are right in insisting upon the concept of stability because, if general stability is not assured, each government will seek locally and ineffectually to achieve stability, thus chopping up the world into a myriad of obstinate, inefficient, and indigestible economies. Is it possible, she asks, to work out policies which contain the element of truth in both—to envisage a world in which certain key positions are maintained by purposive control and governmental action while in the rest of the economy, freedom of movement, action and competition are encouraged and restored? Here at least Miss Ward is asking a good question. One can hope with her that someone will find an affirmative answer.

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Industrial Organization and Markets; Public Regulation of Business

Economic Aspects of Atomic Power. An Exploratory Study under the Direction of SAM H. SCHURR and JACOB MARSCHAK. (Princeton: Princeton University Press. 1950. Pp. xxvi, 289. $6.00.)

The potential usefulness of atomic power has captured the public's imagination just as the potential destructiveness of the atomic bomb has filled us with foreboding. To date, for the most part, economists' thoughts about atomic power have been shaped by the Sunday supplement and a preoccupation with the cost of atomic power and its date of entrance into industry. This book, published for the Cowles Commission for Research in Economics, is by far the most systematic and competent effort made so far to probe the future of industries and regions to gain insight as to the economic propects and probable results of the introduction of atomic power. It is to be hoped that this pioneering effort will set off a chain reaction, and of the breeder type that grows on itself, of further research into the economics of atomic power.

Admitting that the study is exploratory and in no sense definitive, the authors proceed to do a careful, methodical job of analysis. Part One on the "Economic Comparisons of Atomic and Conventional Power" considers the cost and other economic characteristics of atomic power, making use of the few cost estimates now available. For a 75,000 kilowatt nuclear power plant operating at 50 per cent of capacity, the cost at 1946 levels is estimated to range from 4 to 10 mills per kilowatt hour. An intermediate cost of 7 mills might include 5.4 mills for fixed charges on plant and equipment, 1.6 mills

for operating costs, and a negligible amount for fuel. A convenient basis for comparison of atomic and conventional power costs is furnished by an interesting map which shows known or estimated dollar generating costs in numerous parts of the world for power produced from coal, waterpower, oil, gas, and other energy sources.

Part Two, the most helpful part of the study, examines the possible application of atomic power in a number of large or potentially large energy-using industries, including aluminum, chlorine and caustic soda, phosphate fertilizers, cement, brick, flat glass, iron and steel, railroad transportation, and residential heating. In each case answers are attempted to the questions: will the use of atomic power result in cost reductions, what new production techniques are likely to be encouraged, and what changes in industrial location patterns may be expected? For each industry the analysis aims to isolate and compare the energy costs from conventional fuel and from atomic power, using those production processes and locations most favorable to atomic energy, so that the probable competitive cost threshold can be ascertained.

In certain industries, for example aluminum, the production processes would be essentially the same with atomic electricity as with presently used hydro- or gas-produced electric power, but the location of major plant facilities might shift away from cheap energy sources toward either markets or bauxite deposits. In the case of iron and steel, atomic power makes the best cost showing by the use of a different process of iron ore reduction; namely, the sponge iron-low temperature process with electrolytically produced hydrogen as the reducing agent. If expansions in the iron and steel industry should take this technological direction, with steel produced from sponge iron in electric furnaces, significantly new locational patterns for the whole industry may be in the cards. The size of the two major components (blast furnaces and steel furnaces) could be much smaller and they could be widely separated geographically at little cost sacrifice, thereby permitting the exploitation of smaller deposits of ore and the close servicing of smaller markets.

Part Three, called "Atomic Power and Economic Development," contains interesting suggestions as to the possible rôle of atomic power in the industrialization of underdeveloped areas, particularly where atomic power promises to reduce the amount of development capital and foreign exchange required, not alone for electric power facilities, but also for coal mines, railroads, and other ancillary investments. The ubiquitous locational nature of atomic power, arising from its negligible fuel requirements once the initial stock has been procured, should some day prove a great boon to areas such as most of South America where industrial growth is hampered by lack of coal. Part Three also presents an interesting method for estimating the effect of the introduction of cheap atomic power on the national income, and concludes that the major effect is likely to come over the long run through stimulation of innovations and a more rapid accumulation of capital.

The study as a whole provides a fascinating example of how far able economic analysts, making careful use of relevant scientific and engineering as well as economic data, can go toward tentative conclusions, purely on the basis of initial hypotheses as to atomic power cost. The practical relevance of

most of the chapters, of course, will depend on the accuracy and relevance of these hypotheses. Given the very limited information on costs presently available, no other fruitful approach appears possible.

The authors wisely refrain from trying to predict the month and year in which atomic power will be used in this, that, or the other industry or place. They perform the more important service of developing an approach and method for anticipating its economic impact and later effects whenever and wherever it may come into use. To visualize the entrance into the economy of such a dynamic and potentially pervasive force as a new way of producing electric power, and to indicate concretely and quantitatively its major possible effects upon industries, regions, industrial processes, locational patterns, and incomes is a challenge to anyone's mental capacity. Yet this has to be done if we are to have economic guidance in the control and use of atomic power. The Cowles Commission study makes a good start by furnishing a methodology, much background, and many suggestions for industry and area specialists alike who want to pursue the analysis further.

Many major problems of public policy yet to be settled are referred to in the study without being answered. For example, if atomic power is eventually produced jointly with fissionable material, as now seems likely, what principles should govern in the allocation of the large joint costs between the power which would be sold to private users and the fissionable material which would be sold to the government? Should present public power policies calling for low developmental rates and preference to publically and cooperatively owned utilities, which evolved with federal hydroelectric development, be adapted to the marketing of atomic power? What economic and administrative principles should be followed in the licensing, rate making and regulation of atomic power utilities? These and numerous other public policy questions may prove to be as thorny as those of a scientific and engineering nature to which major attention so far has been devoted. The matter has recently become more urgent since a number of private industrial and utility companies, under agreements with the Atomic Energy Commission, have begun experimental work in reactor development looking toward joint production of power and plutonium. Economists, among others, and the Atomic Energy Commission should be encouraged to study these problems which will soon have to be faced.

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Private Corporations and Their Control. By A. B. LEVY. (London: Routledge and Kegan Paul, Ltd. 1950. Volumes I and II. Pp. ix, 916. £3, 10*s*.)

Private Corporations and Their Control is the third publication of The International Library of Sociology and Social Reconstruction whose editor is Karl Mannheim, formerly professor of sociology in the University of Frankfurt-on-Main, and more recently professor of education in London University. Earlier books in the Library's series were Rudolph Schlesinger's *Soviet Legal Theory* and Georges Gurvitch's *The Sociology of Law.* In its own words the Library "deals from a scientific point of view with those problems of economic

and social planning which are of such an urgent nature in the present world situation." It has an impressive Advisory Board including such persons as Sir Harold Butler, Sir Alexander Carr-Saunders, Sir Fred Clarke, and Lord Lindsay of Birker.

In introducing his contribution to the Library, the work under review, Mr. A. B. Levy who was trained in jurisprudence at the University of Budapest and later in England says his book "is concerned with the problems of private corporations and their control" and that it is his aim "to show, by an unprejudiced investigation, that whereas corporations are indispensable if economic progress is to be maintained, a number of legislative reforms are required in order to reinforce public control and to give better protection for shareholders' rights." Mr. Levy does not indicate any particular country as being at the center of his attention. Actually he pays attention to the corporation laws and practices of the United States, Great Britain, and most of the countries of Western Europe. The result is a lack of sharpness of focus, a diffuseness and lack of precision in analysis which will, I believe, leave most American students of "the corporation problem," certainly those of us who approach the problem as economists, disappointed in the results of the author's labors.

What Mr. Levy has really given us is, first, a 223-page history of the evolution of the corporate form of business organization beginning with ancient Egypt and Phoenicia and ending with the consolidated British Act of 1948. Treatment here is by countries with principal attention being given to Great Britain, the United States, France, and Germany, though occasional attention is given to the smaller countries of Western Europe. Following the historical section, there is a 67-page treatment of the part played by the corporate form of organization in the United States and Great Britain and a brief discussion of economic organization in the Soviet Union. Here Mr. Levy makes extensive use of American primary and secondary corporate statistical sources, including our income tax statistics, T.N.E.C. monographs, and the data presented by Berle and Means in the early 1930's. Incidentally, his treatment brings out the surprising skimpiness of reliable and inclusive British corporate statistics as compared to our own. The third and final part of Mr. Levy's two volumes is a 565-page summary of corporation law as he interprets it from his study of a vast number of cases decided by the courts of Great Britain, the United States, and the principal countries of Western Europe. There is here a vast amount of legal information on a wide range of substantive and procedural aspects of corporations. Considerable attention is also given to the administrative regulations of the Securities and Exchange Commission and to certain recommendations of the Cohen Report in Great Britain.

At the end of his second volume, Mr. Levy has a 19-page appendix, the most useful part of which contains information about the processes of nationalization as recently applied in Great Britain. Following the appendix there is a seven-page selected bibliography and a 26-page index.

There can be little question that Mr. Levy has worked with diligence, patience, and genuine seriousness of purpose. Yet somehow his book fails to "come off." Its focus never really becomes sharp. There are too many facts and not enough analysis. The facts just don't seem to march forward to any

objective. Moreover, some of them are simply not accurate. On pages 192 and 193 he says that the Securities and Exchange Commission sets margins in stock trading. Actually this is a responsibility of the Federal Reserve Board of Governors. On the next page he says that the S.E.C. Act "is intended to prohibit short selling in general," a vague, but in so far as it has any meaning, an inaccurate statement. At the bottom of page 246 the total assets of American corporations are given in "millions" of dollars when obviously the figures should have been "billions." Mr. Levy is also sometimes careless in the accuracy of his citations. Thus at different places he assigns two different publication dates to a book written by this reviewer, both of them wrong. In his use of statistical data Mr. Levy is also occasionally careless. Thus on page 237 he confuses statistics of "shareholders" with "shareholdings," though two pages later he, himself, shows how great the relevant differences can be.

The reviewer once heard one Harvard professor describe another Harvard professor's principal work as "a big book, but not a great book." Mr. Levy, too, has written a big book. Undoubtedly students of corporate enterprise will find it a useful book. But it falls far short of being a great book.

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The Navy and the Industrial Mobilization in World War II. By Robert H. Connery. (Princeton: Princeton University Press. 1951. Pp. xi, 527. $6.00.)

This is the first comprehensive study of the wartime industrial mobilization experience of any of the armed forces to appear since World War II. Though not an official Navy Department history, it was written by a former Naval historical officer and received the blessing of Navy officials. Its appearance is especially timely in view of the current industrial mobilization program; also it goes far toward filling the void represented by the absence of publicly available histories of the major wartime procurement agencies.

The Navy spent approximately $100 billions for its World War II effort. It built scores of shipyards, airfields, arsenals, ammunition and general storage depots, receiving and training stations, hospitals, repair yards, advance bases, and a host of headquarters and miscellaneous activities. It planned and financed the creation or expansion of countless industrial establishments owned and operated by private contractors. On top of all this, it directly or indirectly operated these establishments to turn out battleships, aircraft, submarines, ammunition, clothing, and a torrent of other supplies and services equivalent in size to the entire national output of many a sizeable nation. To achieve its purposes it was involved in a complex network of relationships with the War Production Board, the OPA, the Army, OWMR, and numerous other governmental agencies as well as with thousands of Navy prime contractors and subcontractors. Manifestly, it is impossible within the scope of a single volume to do more than present the major problems and developments in each of the principal categories. Mr. Connery has done this remarkably well and has produced a highly readable volume.

If any adverse criticism of the book is to be made, it is on the score of

looseness of organization, with consequent duplication at various places and significant omissions at others where the author's space and time are at a premium. Thus there is frequent duplicate treatment of the structural aspects of the Navy's coordinating agency for procurement—the Office of Procurement and Material—but no significant discussion of so important a feature of the war production program as the CPFF contract, with its complex substantive and administrative problems. Although there is an excellent discussion of termination loans and incidental reference to the problem of matériel surpluses at the end of the war, there is no systematic treatment of the broad problem of contract termination and settlement, which appeared fairly early in the war, had a substantial bearing on war production, and by the Spring of 1945 became the major preoccupation of all the procurement agencies as well as of the entire business community. Labor aspects of the industrial mobilization are slighted, as well as important developments in contract placement and clearance policy. The 50-page chronology at the end of the book will place many historians and others in Mr. Connery's debt; on the other hand, a dozen pages of statistical tables summarizing in quantitative form the Navy's mobilization experience would likewise have been most welcome. But there are limits to what one man can put in one book under the pressure of time, and the author's accomplishments as well as his specific disclaimer in the foreword should be ample armor against criticism in this area.

Unfortunately, all too few academic economists (either in or out of universities) will read this book. But if they were to read it—and read it thoughtfully—they would find in it much to disturb their perennial preoccupation with delicately refined and studiously irrelevant "tools of analysis," and to direct their efforts to actual analysis of major developments in the real world of economic affairs. For example, when the negotiated contract displaced competitive bidding for governmental procurement at the beginning of World War II, price ceased for the duration to be a market phenomenon for the bulk of the nation's expenditures. A whole new set of price-determining techniques and criteria were developed—ranging from OPA ceiling-price control and the "close-pricing" procedures of the procuring agencies to renegotiation, forward pricing, and termination procedures which used overall "company pricing" and the "excessiveness" of profits as criteria for administered price determination. Now that the negotiated contract has been made a permanent feature of government procurement, and in view of the increasing rôle of government as a spending agency in both peace and war—to say nothing of other permanent changes in the structure of our economy inherited from the war—it would seem to be time for a decided shift in emphasis in the content and methodology of economic price theory. Specifically, important developments in the structure of our economic institutions—such as those described and implied by the book under review—are crying aloud for serious attention by serious economists. So far, the response has been meagre when compared with the energy and zeal devoted to the mathematical refinement of economic acrostics and the theory of games.

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Public Utilities; Transportation; Communications

Transportation: Principles, Practices, Problems. By CHARLES E. LANDON. (New York: William Sloane Associates. 1951. Pp. xxii, 618. $4.75.)

This text is well designed for the one-semester introductory course in transportation; and with substantial supplementary readings it might be employed for an additional term. The general character of the various agencies of transportation is stressed and their principal problems are analyzed without submerging the student in an endless array of facts. Though the exposition lacks clarity at times, readers should not be able to complain that they cannot see the transportation system for the freight cars.

The author is not primarily interested in transportation as a case study in administrative and regulatory law, but is mainly concerned with the comparative economic features of the various agencies and their competitive advantages and disadvantages. Accordingly, less reliance has been placed on decisions of the Interstate Commerce Commission and while I.C.C. cases are cited throughout the volume, only fifty-seven pages are devoted to regulation *per se*. Instead, abundant use is made of the reports of the Federal Coordinator of Transportation, the National Resources Planning Board, the Board of Investigation and Research created by the Transportation Act of 1940, and the I.C.C. Bureau of Transport Economics and Statistics. Although the present volume makes more use of economic theory than most introductory texts in this field, many economists will continue to desire a more analytical book. It should also be mentioned that the author has concerned himself exclusively with transportation in the United States, and only a few brief references to foreign countries, which are well chosen to illuminate American problems, are included.

The uneven quality of the work is disturbing to this reviewer. The sections on aviation and shipping are frequently quite weak. Statements about overseas operations contain some glaring inaccuracies. This latter shortcoming is not too serious, however, in a volume primarily concerned with domestic transport. More disadvantageous are: the poor choice and presentation of statistics in Chapter 3; and the inclusion of Chapter 19, which adds little to previously presented materials beyond a few debatable pronouncements. For example, "Low rates to meet water competition are justified even though a competing product does not move by water" (p. 346). "It has long been recognized that those who enjoy luxuries are able to, and should, pay higher [transportation] rates" (p. 352). And one wonders at the usefulness of using an estimate of coal consumption made in 1912 in a discussion of current cost factors (p. 354).

A few other criticisms should also be noted. The relation of traffic density to investment in railway roadbeds is not emphasized sufficiently, and the revolution produced by the dieselization of locomotives is inadequately described. The chapter on "The Nature of Transportation Costs" ignores social costs despite the good description some of them received in earlier chapters on terminals and urban transportation. The use of the concept of elasticity of demand and a more sophisticated determination of maximum revenue would materially improve the section on "What the Traffic Will

Bear" (pp. 283-86). Some may feel that atomic energy might at least have been alluded to in the concluding chapters on "The Future of Transportation." It is also curious that recent postwar rate increases granted to the railroads are not mentioned in the chapter on "The General Rate Level." And regardless of one's political convictions, the section on "Government Ownership and Railroad Credit" (pp. 486-87) is so abbreviated that it is woefully incomplete. Finally, the impressive bibliographies, which follow most chapters, would have more appeal for students if they were more selective.

The entire volume is characterized by an ambivalent tone which stems from two causes. One is a basic confusion which seems to pervade the book, while the other is unavoidable. Despite occasional clarifying statements, the author vacillates between advocating a rate of return that is adequate to attract new capital to the industry and emphasizing that the railroads as a whole have excess capacity. To the extent that this premise of overcapacity might be true, it could easily be reconciled with the need for new capital by pointing out explicitly that some sections of the industry should earn a rate of return that discourages the commitment of additional resources and that induces transferable ones to seek alternate employment, while other sections need funds for modernization or expansion. The other cause of ambivalence is inevitable in an objective presentation of matters containing much that is indeterminate and concerning which there are radically different opinions. In any event, the fact that the analytical portions raise more questions than they answer is pedagogically sound. This provocative and eclectic text should be useful in both economics and commerce courses.

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Toll Roads and the Problem of Highway Modernization. By Wilfred Owen and Charles L. Dearing. (Washington, D.C.: The Brookings Institution. 1951. Pp. ix, 204. $2.50.)

The present volume is a short, compact, yet reasonably complete discussion of toll roads as a device for dealing with current problems of highway finance and administration. The first part of the volume includes a description of the extent of existing and proposed toll roads, an analysis of the underlying highway problem and a discussion of the reasons for the revival of toll roads as a device to supplement traditional methods of highway financing. The nature and magnitude of the current highway problem is concisely summed up by the authors' statement that "Highway administrators are confronted with a situation analogous to that of an entire industry being overtaken by functional obsolescence" (p. 23). In support of this conclusion they cite various official estimates to the effect that highway modernization would cost 50 to 60 billion dollars over the next fifteen years, on the basis of 1948 price levels—a sum far in excess of what is now available under current arrangements for highway support.

This accumulated deficiency is attributed to an extremely rapid growth in the need for highway improvement and a failure to adapt traditional methods of highway financing adequately to meet this need. Among the

factors contributing to the pressing need for highway modernization are the early failure to acquire right of way in anticipation of long-run requirements for highway improvement, the neglect of urban traffic problems, deferred highway maintenance and the virtual cessation of new construction during World War II, the great postwar upsurge in motor vehicle traffic, the disproportionate increase in the number of heavy vehicles and the restrictions imposed by spiraling postwar costs of construction and maintenance. On the other hand, despite these rapidly accumulating needs, revenues have lagged because of a reluctance to increase user charges and a general preference for pay-as-you-go policies. Another serious financial handicap is the widespread use of formulas designed to distribute highway revenue as widely as possible whereas the need for improvement is concentrated on a restricted portion of the highway net. On the basis of the foregoing the authors conclude that the fundamental factors underlying the toll-road movement are "the high cost and urgency of the highway improvement program and the resistance to policy reforms essential for meeting the challenge through traditional financing methods" (p. 62).

From the standpoint of motor vehicle users, toll roads have the advantage of providing immediate realization of improvements which might otherwise be indefinitely postponed, and which result in increased safety and comfort and decreased cost of vehicle operation. From the social viewpoint, the toll road has the merit of charging the direct users for the service provided and of avoiding expenditure on facilities which might be relatively little used. The authors find that toll roads do not result in uneconomic duplication of investment where traffic volume warrants the new facility, nor do they find evidence that toll roads have resulted in the neglect of building or maintaining free roads. On the other hand, the use of revenue bonds for financing these facilities, while insuring that only those projects which have reasonable prospects of being self-liquidating will be undertaken, involves appreciably higher financing costs than when bonds backed by general state credit are used. The difference in cost for the two types of obligations in the case of the proposed New York Thruway is estimated at 100 million dollars over the life of the bonds. If general obligation bonds are used, however, there is danger of projects being undertaken which have little prospect of being self-liquidating and which may therefore involve the states in financial embarrassment. A disadvantage of toll roads as compared with free roads is the cost of collecting tolls, but as an offset there are revenues from filling station and restaurant concessions. In the case of the Pennsylvania Turnpike, the latter revenues exceed the cost of collecting the tolls.

The financial record and prospects of the various toll roads are reviewed and it is concluded that modern toll roads have "reasonable prospects of financial success" (p. 110) if they provide materially better facilities than free roads, if they are undertaken only after careful and disinterested studies of costs and traffic potentials, and if politics and special interest considerations are excluded from management. The authors call attention to the special financial advantages enjoyed by the Pennsylvania Turnpike which make it unreliable as a precedent for other projects. They also make the point that in the interest of avoiding double taxation of the toll-road users, the states

should credit toll roads with the proportion of gasoline tax revenues estimated to be generated on such facilities.

The authors urge a sweeping revision of state highway policies, including greater reliance on property taxes for financing those streets and roads which are primarily access facilities, relaxation of restrictions on borrowing for highway purposes and in general an effort to substitute economic and engineering analyses for political considerations in highway construction and finance. They also recommend that the Federal-Aid Road Act be amended to allow the charging of tolls on highways constructed or reconstructed with the aid of federal funds, thus extending to highways the policy already in effect with regard to toll bridges. Finally, they recommend the integration of toll road and general highway administration in the interest of reducing administrative expense and avoiding possible conflict of policies.

The basic question raised by this volume is whether the free road or the toll road principle is preferable for meeting highway needs. On this point the authors conclude that while the benefits of toll roads in particular situations should not be overlooked, "the ultimate solution for the modernization of the highway system requires a much broader attack on the problems of highway administration and finance. Removal of the conditions which have led to the return of the toll road will require a revamped tax structure, liberalized borrowing procedures, and revised expenditure patterns, all designed to raise the necessary funds and dedicate them to the most urgent highway requirements. Meanwhile, the toll road can serve under limited circumstances as a supplement to traditional methods of highway development where opposing pressures make it impossible to achieve promptly the necessary reforms in highway management" (pp. 187-88).

This volume should prove valuable as supplementary reading in transportation courses and should be required reading for those concerned with the formulation and administration of highway policy.

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Labor

The Structure of Labor Markets. By LLOYD G. REYNOLDS. (New York: Harper & Brothers. 1951. Pp. ix, 328. $4.50.)

The Dynamics of a Labor Market. By CHARLES A. MYERS and GEORGE P. SHULTZ. (New York: Prentice-Hall. 1951. Pp. x, 219. $3.00.)

During the past decade, notions concerning wage structures and worker and employer behavior have been undergoing radical change. Labor economists, from their experience with the National War Labor Board and from field studies, became aware of the naïveté of much traditional economic theory with respect to the motivation and practices of manual workers, business management, and labor unions. Widespread knowledge of the flimsy foundation of neo-classical theory has led to a number of field investigations to provide a better factual basis for testing hypotheses and for reformulating wage theory. The books under review set forth the results of two rather

elaborate and detailed studies of wages and labor mobility, job practices and desires, and company and union policies in a particular labor market area.

These two studies differ somewhat because of differences in objectives and in environmental conditions. Reynolds' book is a final report of the findings of a pioneering study and also an attempt to develop its implications for labor-market theory and policy. Myers and Shultz is a careful attempt, in a relatively small community suffering significant unemployment, to test the hypotheses already developed in other studies, especially those set forth in the preliminary report of Reynolds' study (Reynolds and Shister, *Job Horizons* [1949], reviewed in this *Review*, September, 1949, pp. 1061-62).

Because Myers and Shultz confirm some but not all of Reynolds' findings, it is important to know the differences in the setting of the two studies. Reynolds conducted his in a city of 350,000 (confidentially, New Haven) during 1946-48, when it was experiencing full employment and labor shortages. Myers and Shultz operated in a community of 35,000 (confidentially, Nashua, N.H.) in the 9-month period ending in mid-1949, during which a large lay-off occurred so that unemployment ranged from 9 to 12 per cent of the labor force during most of their field study. Reynolds' study is based on interviews with 850 manual workers selected at random in three groups (450 from a city-wide directory, 350 who had changed jobs during the preceding year, and 50 unemployed); Myers and Shultz interviewed 195 former employees of a partially closed textile mill (51 who quit right after the prospective shutdown was announced and 144 who waited to be laid off). Both studies included interviews with the managements of the chief manufacturing concerns, the local union officials, and the local employment service staff. Less than half the manufacturing employees in New Haven were under union contract compared with 90 per cent in Nashua. Myers and Shultz quote extensively from their interviews.

The findings upon which both studies apparently agree can be summarized as follows:

1. In a community, a range of rates exists for the same grade of labor, so that there is no one rate which "clears the market." Any differences in quality of employees are not sufficient to compensate for the wage differentials, nor can such real wage differentials be explained by the non-wage terms of employment, which are better in the high-wage firms. Reynolds found among the 50 firms interviewed some 21 using the job evaluation plan of the National Metal Trades Association and that, among those 21 plants, the highest-wage one was paying about 60 per cent above the lowest-wage one for Labor Grade 10 (the lowest grade for male employees). Myers and Shultz discovered that dividing their 38 firms into submarket groups by type of labor employed reduced the range of dispersion (as one would expect, partly as the result of reduced numbers), but the two largest subgroups with 15 and 7 firms had spreads showing the minimum wage in the subgroup's highest-paying firm to be 75 and 43 per cent respectively above that of its lowest-paying concern. Reynolds studied the dispersion of the starting rates for 28 manufacturing concerns between 1940 and 1948 and discovered, contrary to his expectations, that the interplant differences were about as great percentage-wise in July, 1948 in a tight labor market as they were in July, 1940 when widespread unemployment prevailed, yet in 1948 "the

low-wage firms were still able to hire enough labor to meet their production schedules."

2. Most production jobs are obtained through informal contacts (primarily through relatives and acquaintances, secondarily by random application at plants), and workers do not make a systematic canvass of job openings, weighing alternatives and making choices according to greatest net economic advantage. Their first jobs are generally blind alley ones. Once established in a "satisfactory" job, manual workers tend to be "out of the market," not interested in the possibility of a better job elsewhere. Their information about jobs is surprisingly fragmentary and incorrect, although job knowledge apparently was better in the smaller community; yet even there seemingly less than one-sixth of the workers interviewed knew about the wages on their present job before applying for it as new employees in the plant (Table 11, eliminating workers previously employed there). Reynolds found that little relation existed between the proportion of workers who regarded their wages as "fair" or who thought their plant's wage level compared favorably with other plants and the actual rank of the plant in the hierachy of the area's wage structure. He also discovered that the actual movement of labor among the younger shiftable segment of the labor force in 1946 and 1947 was not predominantly toward higher-paying jobs, and that "there is little evidence that a high wage level causes more workers to *apply* at a particular plant." On the basis of such data, he concludes that the wage structure is not shaped by actual or potential labor mobility and that the concept of a labor-supply curve to the firm has little meaning or usefulness. On the basis of their study, Myers and Shultz apparently believe labor movement to be somewhat less random in nature and more often influenced by economic considerations.

3. Both studies seem to agree that workers are responsive to a variety of job satisfactions, that wages and physical characteristics of jobs are among the most important, and that the non-wage factors combined generally outweigh wages in job satisfaction although it is difficult to separate one factor from the whole bundle of job attributes. Myers and Shultz cite the case of a firm in the bottom wage-paying group and with few jobs then paying more than 65 to 75 cents an hour, yet able, through good personnel practices, to eliminate avoidable absenteeism, achieve very low labor turnover, and have a long waiting list for employment there. Perhaps because their interviewees were recently subject to lay-off in a loose labor market, Myers and Shultz found more stress on steadiness of employment and less on independence of supervision, fairness of treatment, congenial fellow workers, and inherent job interest than Reynolds did. They concluded that the shutdown changed workers' views of the relative importance of different job attributes, so that under certain circumstances the economic motives in labor mobility need more emphasis than under other circumstances.

4. Companies, like workers, have multiple objectives in employment and follow hiring, lay-off, promotion, and wage practices that prevent real competition in the purchase of labor. Reynolds points out that each company tends to become a water-tight compartment or separate labor market, largely because of company practices; that for internal recruitment for job openings one needs to think mainly in terms of status and hierarchy; and that the range between occupational rates within a plant is probably much greater

than it needs to be for labor-supply purposes. Both studies seem to agree that employee dissatisfaction, morale, and consequent low productivity are more significant than worker movement in causing companies to increase wages. Both bring out the importance of managerial improvements as cost-saving adjustments for wage increases that pinch profits, thus supporting the so-called "shock theory."

Myers and Shultz emphasize the possibilities of reduced labor costs as the result of wage administration in a loose labor market. Increased unemployment tended to weaken worker resistance to changes in production methods, to permit tightened production standards, and to enable some firms to obtain new employees at a lower rate in their wage scale than they could before the lay-off. The authors may, however, overstress the actual effects on wage payments, for none of the firms cut the wage rates of those already employed, and firms representing half of the manufacturing employment reported no effect on rates paid for new employees, those taking advantage of the loose market in hiring new employees being chiefly the low-wage and small, non-union firms. Reynolds' contention that there is little chance of an excess of workers "breaking" the wage rates for particular occupations seems to be valid at least for established manufacturing concerns of any size and reputation. Also Myers and Shultz may, judging by their Table 23 and workers' comments quoted (pp. 120-25), give the impression that workers had more specific knowledge concerning wage scales in different firms than actually was the case, although apparently they were as a group better informed than Reynolds' interviewees.

Little in the way of recommendations for labor-market policy or revision of wage theory is offered by Myers and Shultz, who conclude "As job opportunities changed, workers, employers, and unions acted in ways that are consistent with the market analysis developed by economists." They do not, however, explain exactly what analysis they have in mind (*i.e.*, whether it includes labor-supply and labor-demand curves for the individual firm and the local area), nor do they indicate how they measure consistency (*i.e.*, whether failure to operate inconsistently and whether a wide range of indeterminacy are considered as consistent).

Reynolds's final chapters are entitled, "Toward a Revision of Labor Market Theory" and "The Objectives of Labor Market Policy," the latter consisting of sections on "norms for wage policy," "optimum movement of labor and employment service operations," and "the school system and occupational choices." These chapters were, to this reviewer, rather disappointing. The chapter on theory offers little that is new, contains no mention of the marginal productivity theory, and does not develop an alternative body of theory. The criticisms of Henry C. Simons in these two chapters, although good, can be found in previous writings. The suggestions for economy-wide job evaluation and systematic training in labor-market matters in high school seem a bit visionary.

These two studies have added greatly to our knowledge of the motives and behavior of workers and managements, and they offer many hypotheses for further testing. They demonstrate the need for additional studies of worker and management motivation and of the dimensions of industrial employment

under different conditions. Above all, they emphasize the need to develop a new body of theory, or a reformulation of existing theories, that (1) is based on multiple motivation at worker, management, and consumer levels, (2) explains group influences and evolutionary changes in the attitudes and goals of workers, management, and consumers, and (3) is integrated with the other social sciences.

The more "mixed" our economy becomes, the greater is the need for theoretical constructs that will explain the facts of everyday life in America today and in the days to come (both the short and the long run). We already know the shortcomings of existing theories for such purpose, but old theories never die, and it takes a new theory to make an old one obsolete. In a highly integrated discipline like economics, real progress involves the accumulation of enough disturbing factual data and of sufficient theoretical advance to disrupt well-worn modes of thought and to penetrate the intellectual walls of the elementary text. Field studies such as these may well bring about another "revolution" in economic thought.

RICHARD A. LESTER

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Destination Unknown—Fifty Years of Labor Relations. By WALTER GORDON MERRITT. (New York: Prentice-Hall. 1951. Pp. x, 454. $4.25.)

The protagonists before the Presidential fact-finding board in the General Motors dispute in 1945 afforded a symbolic contrast between the new and the old in labor relations. Walter Reuther for the UAW—youthful, militant, toying with daring ideas; Walter Gordon Merritt for the Corporation—suave, a bit tired, and sophisticated in the arts of the adversary proceeding. At the time, it seemed to this reviewer, the forward thrust of history had overtaken and passed the ideas that the attorney represented. One comes away from his impersonal autobiography with much the same feeling.

Mr. Merritt's lifetime spans a tumultuous half-century of labor history and is rich in great cases. He represented Loewe in the *Danbury Hatters* case, the Duplex Printing Press Co. in *Duplex v. Deering*, the anthracite operators in the 1922 strike, and many other employers. This book, while in part an informal history, is more significantly a recapitulation of his philosophy of union-management relationships.

Mr. Merritt is, essentially, an individualist whose career has witnessed the slow attrition of theory under the force of events. Though he would prefer a society in which men stood alone, he has come to recognize that it is not attainable in a technical, interdependent economy. As a consequence, he is not, as many think, on the far right but somewhat closer to center. He has long opposed the yellow-dog contract, a fact, incidentally, that lost him the retainer in the *Hitchman* case. He disagrees with those who would amend Taft-Hartley to outlaw industry-wide bargaining, since "I am satisfied it cannot be done by legal fiat." He is against compulsory arbitration except for coal, the railways, and the public utilities. The favorite weapon in his holster, of course, is the injunction, and he comes vigorously, and less than persuasively, to its defense.

Mr. Merritt is disturbed lest the spread of unionism should in the long

run destroy our free society. This is not because unions are inherently inimical to capitalism, but rather because union leadership is pressed to justify itself by vilifying the employer. The risk, as he sees it, is that sustained propaganda will be converted into results. "Those who sow the seeds of discord may harvest an unwished-for crop."

Destination Unknown, given its rather loose organization, is a not unwelcome addition to recent labor history from the employer's side.

IRVING BERNSTEIN

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Readings in Labor Economics and Industrial Relations. Edited by JOSEPH SHISTER. (Philadelphia: J. B. Lippincott Co. 1951. Pp. x, 661. $4.75.)

This collection of readings is designed to supplement the textbook chosen for the basic course in Labor Economics. Instructors are aware of the shortcomings of any standard textbook which must deal with the multitude of varied and controversial subjects usually covered in the introductory labor course. A well-rounded text serves to "expose" the student to the many diverse problems and issues; it should also provide sufficient focus and integration to discourage the student (and instructor) from the two temptations of "riding off in all directions" and getting nowhere in particular, or, on the other hand, of riding a particular hobby to the exclusion of all else. At best, a textbook can include only a limited amount of factual data and theoretical discussion with the result, as the editor of this volume points out in his Preface, that the student is not afforded sufficient "opportunity of being exposed to different approaches and viewpoints."

The problem which any instructor has to face is how to obtain this broader exposure. Is the answer a collection of selected essays, neatly classified and bound between two covers? Or should the student be turned loose in the library with a suggested reading list, and given the challenge and opportunity of learning the thoughts and interpretations of various authorities at their source? It is the opinion of the reviewer that the short-cut, spoon-fed device of the anthology is a dubious aid in the educational process; that it is as important for a student to learn *where* material on any subject can be found as it is to acquire a body of knowledge from one or two books; that it is an injustice to the student to be encouraged to get the impression that books are the sole source of knowledge, especially in a dynamic field such as labor problems where reference to periodicals is the only way of keeping informed on current thinking and developments. There is one justification for a "collected readings," namely, if it makes materials available which are out-of-print or otherwise inaccessible to the average student. But this does not pertain to the present volume, for with the one exception of excerpts from Hoxie's *Trade Unionism*, all the selections are from recent publications which can be, or at least should be, found in any college library.

Not all instructors will take this negative view, and those who see value in the "collective readings" medium will find this volume affords a presentation of some of the best thinking on the labor issues of the day. The volume

is divided into five Parts under the headings: The American Working Class; Trade-Unionism; Collective Bargaining; Employment Security; Income and Leisure Security. Each Part is further classified into sections with a half dozen or more selected essays by various authorities. Preceding the selections in each of the five Parts is an introduction written by the editor which, in his words, "is designed to provide a framework in terms of which the ensuing selections can be more readily understood."

Most of the authors are college professors; a few are business and union representatives, and several selections are from government reports. As already indicated, practically all the articles are of recent date—that is, written within the last five or six years. Unfortunately, several which deal with some of the "hottest" issues were written before the passage of the Taft-Hartley Act, which fact outmodes some of the discussion.

The volume includes 93 selections by more than 40 different authors—an indication of its broad coverage of subject matter and diversified approach to the problems discussed. The material is well organized and the Appendix includes a series of questions which many instructors will find helpful for class discussion, term papers and examinations.

FLORENCE PETERSON

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Unclassified

The Lonely Crowd—A Study of the Changing American Character. By DAVID RIESMAN, in collaboration with REUEL DENNY and NATHAN GLAZER. (New Haven: Yale University Press. 1950. Pp. xi, 386. $4.00.)

This book represents an extremely fruitful attempt to develop a typology for the understanding of industrial, especially American, society. Riesman classifies societies according to ways in which social conformity is accomplished, and relates them to phases of population development. In societies with a high birth and death rate, conformity is insured by the tendency to follow tradition, as in many non-literate cultures and in precapitalist Europe. In the phase of transitional population growth, where population increases absolutely because of a declining death rate, an internalized set of general goals, implanted early in life, insures conformity as in industrial Europe and America of the nineteenth century. The phase of incipient population decline, moving towards a net decrease in population, is accompanied by the emergence of the other-directed character orientation. Here "conformity is insured by the tendency to be sensitized to the expectations and preferences of others. . . . The contemporaries are the source of direction for the individual. . . . The goals toward which the other-directed person strives shift with that guidance; it is only the process of . . . paying close attention to the signals from others that remain unaltered through life."

Inner-directedness is related to an economy of scarcity and to periods of increased mobility, rapid accumulation of capital with intense technological change, and economic expansion. Inner-directed middleclass man has an unconscious inner "gyroscope" which makes him strive for the internalized goals of acquisition of goods, fame and power, evaluated in terms of money.

He is interested in the production of physical things, in technological problems, in work for work's sake, and in the competitive pursuit of these goals. Enjoyment of things is of secondary importance. Work is considered a protection against character failure. Careers are based on systematic life plans. Riesman's characterization of the inner-directed person often reads like a translation of marginal utility analysis into sociopsychological terms.

Other-directedness emerges in an economy of abundance in capital-rich periods with large productive capacity. The problems of production and technology have been solved. New techniques are used in industry to manipulate people through communication and control. Technical skill declines but skill in handling human relations is required from managers sensitive to the attitudes of their staff and line. "Antagonistic cooperation" changes the character of competition from "free trade" to "fair trade" where price cutting is outlawed. The inner-directed goal of profit maximization becomes less important.

Management is influenced by the opinions of various veto-groups such as consumers, suppliers, labor, government, etc. Executives have exchanged the "public-be-damned" attitude for a "radar" which registers and adapts itself to public opinion. Consumption, previously a by-product of the accumulation of wealth, becomes an end in itself. From early youth people are trained as consumers. The emphasis shifts from the display of wealth to that of tastes. The relation to commodities becomes personalized; people do not want so much to acquire the same things as others but to duplicate the others' experience in consumption. Commodities change from an ultimate end to a means of relating oneself to others.

The most interesting aspect of this book to the economist is the coincidence of its findings with modern economic theory. The growing emphasis on consumption is reflected in Keynesian economics with its positive evaluation of spending. Other-directed attitudes towards consumption and leisure form the socio-cultural background from which the concept of product-differentiation was derived. A new, possibly unconscious, attitude towards goods, may have caused the blurring of the lines between commodities, competitors, and markets, analyzed in Chamberlinian and similar models. The emphasis on goals other than profit-maximization in recent writings on the theory of the firm may be interpreted as recognition of the changing character of American business management. Thus, differences of opinion about socio-psychological assumptions in economic theory could perhaps be resolved by recognizing that they stem from different character orientations. The assumptions of neoclassical theory about rational economic behavior may have been applicable to a society of inner-directed economic men. The "non-economic" elements, recently introduced into the theory of the behavior of consumers and corporate management, may be a symptom of growing "other-directedness."

This penetrating investigation of the American social character presents the economist with a tool for the understanding of his own theories in the light of a secular change in the basic value-attitudes of our times.

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TITLES OF NEW BOOKS

Economic Theory; General Economics

ALT, R. M. and BRADFORD, W. C. *Business economics—principles and cases.* (Chicago: Richard D. Irwin. 1951. Pp. xii, 581. Text ed., $5.50.)

BAUMOL, W. J. With a contribution by R. TURVEY. *Economic dynamics—an introduction.* (New York: Macmillan. 1951. Pp. xiii, 262. $5.)

BERTOLINO, A. *Esplorazioni nella storia del pensiero economico.* (Firenze: La Nuova Italia. 1950. Pp. xi, 417.)

A group of previously published papers, ranging from the ancient world to Keynes and Beveridge, and including some unusual and interesting subjects such as John Gower, Bacon, Fénelon, and Filangieri.

BRINKMANN, C. *Wirtschaftsformen und lebensformen—gesammelte schriften zur wirtschaftswissenschaft und wirtschaftspolitik.* (Tübingen: J.C.B. Mohr [Paul Siebeck]. 1950. Pp. 550. DM 26,80; cloth, DM 29,80.)

BÜCHNER, R. *Grundfragen der wirtschaftspolitik.* (Berlin: Duncker und Humblot. 1951. Pp. 46.)

CARELL, E. *Allgemeine volkswirtschaftslehre.* (Munich: Richard Pflaum Verlag. 1951. Pp. 476. DM 18, —; cloth, DM 19,50.)

DUTT, S. N. *Conflicting trends of economic thought—a critical and comparative study of classical, Keynesian, Marxian and socialist economics.* (Calcutta: Institute of Commerce and Economics. 1951. Pp. vi, 204. Rs. 7/—.)

EUCKEN, W. *Die grundlagen der nationalökonomie.* 6th ed. (Berlin: Springer-Verlag. 1950. Pp. xvii, 279. DM 18,60.)

Also recently published in translation, "The Foundation of Economics," by the University of Chicago Press.

HESS, A. P., JR., GALLMAN, R. E., RICE, J. P., and STERN, C. *Outside readings in economics.* (New York: Thomas Y. Crowell Co. 1951. Pp. xiii, 877. $2.75.)

KUMARAPPA, J. C. *Gandhian economic thought.* (Bombay: Vora and Co. 1951. Pp. 72. Rs. 1-4.)

ROBERTSON, H. M. *The Adam Smith tradition—inaugural lecture delivered before the University of Cape Town 13 October 1950.* (Cape Town: Oxford Univ. Press. 1950. Pp. 23. 2 *s.*, 6 *d.*)

RÜSTOW, H.-J. *Theorie der vollbeschäftigung in der freien marktwirtschaft.* (Tübingen: J.C.B. Mohr [Paul Siebeck]. 1951. Pp. 329. DM 15,60.)

SCITOVSKY, T. *Welfare and competition—the economics of a fully employed economy.* (Chicago: Richard D. Irwin. 1951. Pp. xvi, 457. $5.50.)

SIMONDE DE SISMONDI, J.-C.-L. *Nouveaux principes d'économie politique.* 3rd ed. re-issue. (Genève-Paris: Les Éditions Jeheber. 1951. Pp. 345.)

SRAFFA, P., editor, with the collaboration of M. H. DOBB. *The work and correspondence of David Ricardo.* Vol. I, *On the principles of political economy and taxation.* Vol. II, *Notes on Malthus' principles of political economy.* (New York: Cambridge Univ. Press, for the Royal Economic Society. 1951. Pp. lxii, 447; xviii, 463. Each vol. $4.75.)

The following is quoted from the publisher's announcement:

The plan is for eleven volumes in all, of which nine are already in proof. The story of this edition and of how it comes to be complete, is told in the Preface to the first volume. Two quite separate dramatic discoveries of papers were made; the first in 1930, when all the important letters received by Ricardo were discovered in the possession of descendants; and the second in 1943, when the whole series of Ricardo's

letters to James Mill were found, as well as a number of new writings. The volumes containing Ricardo's correspondence carry 553 letters, of which more than half are now published for the first time. These volumes print not only Ricardo's own letters, but also those received by him from his chief correspondents. Several new papers and notes are also now printed for the first time, and his speeches in the House of Commons (scattered through eleven volumes of Hansard) have been collected. The following list gives the titles of the first nine volumes: I, Principles of Political Economy and Taxation; II, Notes on Malthus; III and IV, Pamphlets and Papers; V, Speeches and Evidence; VI to IX, Letters. Two additional volumes are still in preparation and will contain further biographical material, including the Journal of a Tour on the Continent, and a General Index to the whole work.

STAVENHAGEN, G. *Geschichte der wirtschaftstheorie.* (Göttingen: Vandenhoeck und Ruprecht. 1951. Pp. 320. DM 19,50.)

STEPHEN, L. *The English utilitarians.* Vol. I, *Jeremy Bentham.* Vol. II, *James Mill.* Vol. III, *John Stuart Mill.* Series of reprints of scarce works on political economy, nos. 9, 10, 11. (London: London School of Econ. and Pol. Sci. 1950. Pp. viii, 326; vi, 382; vi, 525. £2. 2s per set.)

VÖLK, K. H. *Ganzheitliche wirtschaftswissenschaft.* (Munich: Richard Pflaum Verlag. 1950. Pp. 216.)

WEDDIGEN, W. *Wirtschaftsethik—system humanitärer wirtschaftsmoral.* (Berlin: Duncker und Humblot. 1951. Pp. 214. DM 12,70.)

ZIMMERMAN, L. J. *Geschiedenis van het economisch denken.* 2nd ed. (The Hague: Uitgeverij Albani. 1950. Pp. 276. Geb. *f.* 8,90.)

Economic History; National Economies

BENZANSON, A., assisted by DALEY, B., HUSSEY, M., and DENISON, M. C. *Prices and inflation during the American Revolution—Pennsylvania 1770-1790.* Wharton School of Finance and Commerce, Indus. Research Dept., research stud. XXXV. (Philadelphia: Univ. of Pennsylvania Press. 1951. Pp. xvi, 362. $6.75.)

BORAH, W. *New Spain's century of depression.* Univ. of California pub. in Ibero-Americana: 35. (Berkeley and Los Angeles: Univ. of California Press. 1951. Pp. 58. 75c.)

CARLSON, T. L. *The Illinois military tract—a study of land occupation, utilization and tenure.* Illinois stud. in the soc. sci., vol. XXXII, no. 2. (Urbana: Univ. of Illinois Press. 1951. Pp. vii, 218. $2.50; cloth, $3.50.)

CHASE, S. *"Operation Bootstrap"—report of progress, 1951.* Prepared for the NPA Business Committee on National Policy. Planning pamph. no. 75. (Washington: Nat. Planning Assoc. 1951. Pp. vii, 71. $1.)

CLOUGH, S. B. *The rise and fall of civilization—an inquiry into the relationship between economic development and civilization.* (New York: McGraw-Hill. 1951. Pp. xiii, 291. $4.50.)

FAY, C. R. *Palace of industry, 1851.* (New York: Cambridge Univ. Press. 1951. Pp. 156. $3.)

A delightful illustrated account of the "Crystal Palace" no doubt timed for the Festival year a century later.

GEORGE, M. D. *London life in the eighteenth century.* Series of reprints of scarce works on political economy, no. 12. (London: London School of Econ. and Pol. Sci. 1951. Pp. xii, 452.)

OTTO, H.-J. *Strukturwandlungen und nachkriegsprobleme der wirtschaft Italiens.* Kieler stud. 18. (Kiel: Institut für Weltwirtschaft, Universität Kiel. 1951. Pp. 106. DM 7,50.)

PATTERSON, E. M., editor. *Lessons from Asia.* (Philadelphia: Am. Academy of Political Science. The Annals, July, 1951. Pp. vi, 197. $2.)

Contains a section of articles on economic and social aspects.

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STEINER, H. A. *Report on China.* (Philadelphia: Am. Academy of Political Science. The Annals, Sept., 1951. Pp. ix, 291. $2.)

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WALLICH, H. C. and ADLER, J. H. *Public finance in a developing country: El Salvador—a case study.* (Cambridge: Harvard Univ. Press. 1951. Pp. xviii, 346. $6.)

Prepared with the collaboration of E. R. Schlesinger, F. Nixon, and P. J. W. Glaessner.

Economic development of Puerto Rico, 1940-1950, 1951-1960. (San Juan: Puerto Rico Planning Board. 1951. Pp. 179.)

Eli F. Heckschers bibliografi 1897-1949. (Stockholm: Ekonomisk-Historiska Institutet. 1950. Pp. 122.)

The nationalization of British industries. (Durham: Duke University School of Law. Law and Contemporary Problems, autumn, 1951. Pp. 197. $1.50.)

Revista de economia de El Salvador. (San Salvador: Instituto de Estudios Economicos, Ministerio de Economia. 1950. Pp. xii, 657.)

Role of private enterprise in India—in retrospect and prospect. (Calcutta: Indian Chamber of Commerce. 1951. Re. 1.)

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BOGUE, D. J. *State economic areas—a description of the procedure used in making a functional grouping of the counties of the United States.* Pub. of Bureau of the Census, Dept. of Commerce. (Washington: Supt. Docs. 1951. Pp. 96. $1.)

BUROS, O. K., editor. *Statistical methodology reviews 1941-1950.* (New York: John Wiley and Sons. 1951. Pp. x, 457. $7.)

Third in a series prepared to assist research workers and statisticians to locate and evaluate statistical methodology books. Titles of earlier publications: *Research and statistical methodology books and reviews 1933-1938* and *The second yearbook of research and statistical methodology books and reviews.*

MUDGETT, B. D. *Index numbers.* (New York: John Wiley and Sons. London: Chapman and Hall Ltd. 1951. Pp. x, 135. $3.)

PADEN, D. W. and LINDQUIST, E. F. *Manual for "Statistics for economics and business."* (New York: McGraw-Hill. 1951. Pp. iii, 133. $2.)

WINKLER, W. *Grundfragen der ökonometrie.* (Vienna: Springer-Verlag. 1951. Pp. xiii, 220. $4.50.)

Consumers' price index. Hearings before a subcommittee of the House Committee on Education and Labor, 82nd Cong., 1st sess., May 8-20, 1951. (Washington: Supt. Docs. 1951. Pp. 427.)

Study of wage and price indexes. Hearings before the Senate Subcommittee on Labor and Labor-Management Relations, 82nd Cong., 1st sess., on wage and price factors in the labor aspects of defense mobilization, Mar. 19, 1951. (Washington: Supt. Docs. 1951. Pp. 47.)

Economic Systems; Planning and Reform; Cooperation

CAMPO, P. *Glimpses of a new horizon—an outline of a new economic and social order.* (New York: William-Frederick Press. 1951. Pp. 58. $1.25.)

An effort by a Methodist minister to envisage a noncompetitive economic order based on Christian principles.

COLE, G. D. H. *The British co-operative movement in a socialist society.* A report written for the Fabian Society. (London: George Allen and Unwin Ltd. New York: Macmillan, 1951. Pp. 168. $3.)

FLORINSKY, M. T. *Towards an understanding of the U.S.S.R.—a study in government, politics, and economic planning.* Rev. ed. (New York: Macmillan. 1951. Pp. x, 223. $3.)

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NOTES

International Economic Association

Professor G. Haberler has provided the following note:

Two round-table conferences organized by the International Economic Association were held in Talloires (France) in the late summer of 1951. The first one, concerned with Methods of Teaching Economics (August 27-31, 1951), was attended by about ten economists from the United States, United Kingdom, France, Germany, Egypt, India, Turkey, Italy, and Sweden. The chief American participant was Professor Horace Taylor, of Columbia University, and the chairman of the Conference and *rapporteur general* was C. Guillebaud, of Cambridge University. Written reports on the organization and the major problems of teaching economics in institutes of higher learning in the above-mentioned countries (and Mexico) were submitted. These papers formed the basis for a systematic exchange of views on the principal problems, the weaknesses and points of strength of economic instruction in the various countries. The papers, together with a summary and a report on the discussion from the pen of Mr. Guillebaud, will be published in 1952. Place, date and price of this publication will be announced in a later issue of the *American Economic Review.*

The other round-table conference was held from September 2 to 8. Its subject was "Monopoly and Competition and Their Regulation." It was attended by about twenty-five economists from some twelve countries. The program had been worked out by a committee under the chairmanship of Professor Edward H. Chamberlin, of Harvard University. Papers were submitted in writing. Among them were country papers containing background material on subjects like Government Regulation of Monopoly, General Public Attitudes, research currently done in the general area, as well as a brief sketch on the Market Structure, Concentration of Industry, and the like for the United States, the United Kingdom, Canada, France, Germany, the Scandinavian countries, Italy and South Africa.

Other papers dealt with the following subjects: Real Economies of Integration and Large-scale Production vs. Advantages of Domination; Problems of Entry and Exit; Theoretical Problems of Competition; The So-Called Wastes of Competition; Competition and the Objectives of Government Policy; Monopoly and the Problem of Stabilization; Innovation and Technical Progress under Monopoly and Competition.

The papers, together with the summary of discussions and an introduction by Professor Chamberlin, will be published in 1952. Details will be announced in a later issue of the *American Economic Review.*

The International Economic Association plans to publish an annual volume, *International Economic Papers,* which will make available in English translation important articles written and published originally in other languages. The first volume is scheduled to be published by Macmillan in London and New York in December, 1951. It will contain articles by Ragnar Frisch, Erich Schneider, Heinrich v. Stackelberg, Jan Tinbergen, among others.

Research Fellowships and Grants

The Social Science Research Council has announced fellowships and grants of two distinct types to be offered in 1952: (1) Those designed exclusively to further the training of research workers in social science and designated as *Research Training Fellowships* and *Area Research Training Fellowships;* (2) Those designed to aid scholars of established competence in the execution of their research, namely, the *Travel Grants for Area Research, Grants-in-Aid of Research,* and *Faculty Research Fellowships.* None of the awards in the second group is available to students working for degrees.

Inquiries should be addressed to the Social Science Research Council, 726 Jackson Place,

N.W., Washington 6, D.C., and applications, on forms provided by the Council, must be filed not later than January 15, 1952.

An announcement describing Faculty Research Grants to Liberal Arts Colleges will be issued by the Council in January, 1952.

New Publication

Der Osterreichische Volkswirt, the Austrian economic weekly, is now publishing a monthly edition in English, *The Austrian Economist*. The price is $6.00 annually, the address Vienna, 1., Wipplingerstrasse 34, Austria.

Deaths

A. H. Armbruster, dean of the College of Commerce, Ohio University, Athens, Ohio, died May 5, 1951.

Henry C. Levy, of The City College, New York, died March 29, 1951.

Roswell C. McCrea, former dean of the Graduate School of Business of Columbia University, died July 3, 1951.

Appointments and Resignations

Lawrence Abbott has been appointed associate professor in the department of economics and sociology of Mount Holyoke College.

Edward Albertal, formerly of the University of Minnesota, has joined the staff of the Department of Economic Affairs of the United Nations.

Russell Altenberger has been appointed instructor in statistics at Alabama Polytechnic Institute.

O. J. Anderson has been promoted from instructor to assistant professor of business organization and management in the College of Business Administration, Universitv of Nebraska.

James W. Angell has been on leave from Columbia University to serve with an Expert Group of the United Nations appointed to prepare a report on reduction of the international impact of economic recessions.

Melvin L. Anshen, formerly of the University of Indiana, will become professor of industrial administration at Carnegie Institute of Technology in January, 1952. He is now serving as administrator of Program and Requirements of the Defense Production Administration.

Paul Arnolds-Patron, formerly of Whitman College, has been appointed to the staff of the department of economics, School of Commerce, Accounts, and Finance, New York University.

Arthur G. Ashbrook, Jr., has resigned from Duke University and is now chief economist in the Office of Price Stabilization at Charlotte, North Carolina.

Morton S. Baratz has been appointed instructor in economics at Yale University.

Grace Beckett has been promoted from assistant professor to associate professor of economics at the University of Illinois.

Norton M. Bedford has been promoted from assistant professor to associate professor of accounting at Washington University.

Anne Bezanson was named professor emeritus upon retirement from the Wharton School of Finance and Commerce, University of Pennsylvania, in June, 1951.

Walter E. Blackledge has accepted an appointment as assistant professor of management at Los Angeles State College of Applied Arts and Sciences.

Roy G. Blakey, of the University of Minnesota, who has been visiting professor of economics at the University of California at Los Angeles the past three years, is lecturing at the University of Ankara, Turkey.

H. S. Bloch directed a U.N. Technical Assistance Conference on Comparative Fiscal Administration in Geneva in the summer and is now serving as a technical assistance expert in Israel.

Richard M. Bourne has been promoted from assistant professor to associate professor of economics and labor relations in the College of Business Administration, University of Nebraska.

Edward H. Bowman has been appointed instructor in management at The Ohio State University.

Dorothy S. Brady is with the Bureau of Labor Statistics, Department of Labor.

Marjorie S. Brookshire has accepted an appointment as instructor in economics at the University of Texas.

Paul Bullock, Jr., has resigned from the faculty of Occidental College.

Carl E. Calohan has resigned from the University of Florida to become chief price analyst for the Office of Price Stabilization in Savannah, Georgia.

Rondo E. Cameron has been appointed instructor in economics at Yale University.

Vivian Carlip has been appointed instructor in the department of economics and sociology at Mount Holyoke College.

Reynold E. Carlson, on leave of absence from Vanderbilt University, is serving as economic consultant to the American section of the Joint Development Commission for Point Four in Rio de Janeiro, Brazil.

Philip W. Cartwright has returned to the University of Washington after serving as assistant regional economist and district price executive with the Office of Price Stabilization in Seattle.

Bernard F. Cataldo has been promoted from associate professor to professor of business law in the Wharton School of Finance and Commerce.

W. E. Chalmers has been granted leave of absence from the University of Illinois to serve with the Wage Stabilization Board in Washington, D.C.

Gordon Chapman has been appointed faculty lecturer in marketing in the School of Business, Indiana University.

William H. Chartener, formerly associated with Editorial Research Reports, is now an industrial relations analyst with the Wage Stabilization Board in Washington, D.C.

I-Nien Chien has resigned from the University of Minnesota, to accept a position as market analyst with the Wyandotte Chemical Corporation.

George H. Cleaver has been appointed assistant professor of economics at Bard College.

Clay L. Cochran has been promoted from assistant professor to associate professor of economics at the University of Oklahoma.

John A. Cochran has been given leave of absence from the University of Illinois for military service.

Robert P. Collier has been appointed acting assistant professor of economics at the University of Washington.

Morris A. Copeland has been granted a leave from Cornell University to accept a Fulbright grant to lecture at the University of New Delhi, India.

Earl C. Crockett, professor of economics at the University of Colorado, has been appointed chairman of the department of social sciences, University of Colorado.

James A. Crutchfield, on leave of absence from the University of Washington, is serving as assistant regional economist with the Office of Price Stabilization in Seattle.

Howard A. Cutler has resigned from the University of Illinois and has accepted an appointment as assistant professor of economics at Pennsylvania State College.

John A. Daiker has been promoted from instructor to assistant professor of accounting in the College of Business and Public Administration, University of Maryland.

William R. Davidson has been promoted to assistant professor of business organization at The Ohio State University.

Raymond C. Deiu has been promoted from associate professor to professor of accounting in the College of Business Administration, University of Nebraska.

William Diebold, Jr., of the Council on Foreign Relations, has been appointed visiting lecturer in economics, European Institute, at Columbia University, for the spring session of 1952.

Joel B. Dirlam has been appointed instructor in economics at the University of Connecticut.

Harry M. Dixon has joined the staff of the Office of Price Stabilization, Seattle, Washington.

Leonard A. Doyle, formerly of the University of California, has been appointed acting associate professor of economics at Stanford University.

John F. Due has been promoted from associate professor to professor of economics at the University of Illinois.

C. L. Dunn has been appointed assistant professor of accounting in the College of Commerce, Louisiana State University.

Howard S. Dye has resigned from the staff of the department of economics of the University of Texas to accept an associate professorship at the University of Tennessee.

William Dymond has resigned as assistant professor of business administration at the University of Massachusetts.

Robert S. Eckley has resigned from the University of Kansas to take a position as industrial economist in the Federal Reserve Bank of Kansas City.

Robert Edminster has been appointed acting assistant professor at the University of Washington.

Robert Eisner has been promoted from instructor to assistant professor of economics at the University of Illinois.

Edmund A. Ennis has been given military leave of absence from the Wellington Corporation, Philadelphia, Pa., to return to active duty with the United States Air Force.

Grover W. Ensley, who had served two years as associate staff director, has been appointed staff director of the Congressional Joint Committee on the Economic Report in succession to Theodore Kreps.

Robert D. Entenberg, of the University of Missouri, has been appointed assistant professor of marketing at the University of Georgia.

Gerald F. Franklin has been appointed instructor in the department of government and economics in the School of Business Administration of the University of Miami.

Seymour Friedland has resigned from the Bureau of Labor Statistics to accept an appointment as instructor in economics at Middlebury College.

David Felix has been reappointed acting assistant professor at the University of Washington.

D. I. Fellers has been appointed instructor in accounting at Louisiana State University.

Robert Ferber has been promoted to research associate professor of economics in the Bureau of Economic and Business Research, University of Illinois.

Frank W. Fetter, of Northwestern University, is conducting a weekly seminar in international trade at the University of Wisconsin this semester.

Allan Fisher, formerly of the United States Treasury, has been appointed professor of business administration, College of Business and Public Administration, University of Maryland.

Martin R. Gainsbrugh has been promoted from adjunct associate professor to adjunct professor of economics in the School of Commerce and Graduate School of Business Administration of New York University.

L. A. Gaitanis has been promoted from assistant professor to associate professor of business organization and operation at the University of Florida.

Walter Galenson has resigned as assistant professor of economics at Harvard University and is now a member of the staff of the Industrial Relations Institute, University of California.

George Garvy, of the Federal Reserve Bank of New York, is in Nicaragua making a survey of fiscal problems as consultant to the International Bank for Reconstruction and Development.

Morris D. Glickfeld is on leave from the University of Washington on a Fulbright award for research at the University of Bombay.

Carter Goodrich has been on leave from Columbia University to serve as chief of a United Nations Technical Assistance Mission to Bolivia.

Erwin Graue, professor of economics at the University of Idaho, has received a Fulbright award to teach at the University of Ankara, Turkey in the current academic year.

Richard W. Graves has been appointed instructor in statistics in the College of Commerce and Business Administration of Tulane University.

Henry Grayson, formerly at Superior State College, Wisconsin, has been appointed associate professor of economics at the University of Maryland.

Peter Greenwood has been promoted to associate professor in the department of finance of the School of Commerce, University of Southern California.

Everett E. Hagen has accepted a position as economic consultant to the Burmese government in Rangoon, Burma.

Earl C. Hald is on leave from the University of Washington to serve as regional economist with the Office of Price Stabilization in Seattle.

A. S. Hall has been appointed instructor in economics at the University of Illinois.

Franklin P. Hall is on leave from Connecticut College to serve as chief economist in the Connecticut District Office of the Office of Price Stabilization.

James K. Hall, on leave from the University of Washington, is serving as regional price executive in the Office of Price Stabilization in Seattle.

Frank Hanna has been promoted to professor of economics at Duke University.

C. Lowell Harriss, of the department of economics of Columbia College, attended the September meeting of the International Fiscal Association in Zurich and, as a director, the Conference of the International Institute of Public Finance in London.

Everett D. Hawkins is on leave from Mount Holyoke College to serve as program planning officer for the Special Technical and Economic Mission to Indonesia of the Economic Cooperation Administration.

Samuel P. Hayes, Jr., has resigned from the Technical Cooperation Administration of the Department of State to join the Economic Cooperation Administration as chief of the Special Technical and Economic Mission to Indonesia.

Arnold C. Harberger, of the Johns Hopkins University, has been on special assignment with the President's Materials Policy Commission.

William H. Hayt has been appointed instructor in marketing in the School of Business, University of Chicago.

William Hefner has been appointed assistant professor of business administration at the University of Massachusetts.

O. C. Herfindahl has resigned as assistant professor of economics at the University of Illinois and has accepted a position in the Department of Interior, Washington, D.C.

Edward S. Herman, formerly of the University of California, is instructor in economics at the Carnegie Institute of Technology.

Paul T. Homan has been appointed chairman of the department of economics at the University of California, Los Angeles.

Marshall Howard has been appointed assistant professor of business administration at the University of Massachusetts.

Elmo L. Jackon has returned to the University of Florida as associate professor of economics after serving as research economist with the Department of Agriculture at Vanderbilt University.

William Jaffe, of Northwestern University, has been awarded a Fulbright scholarship for research in France on the life and works of Leon Walras.

Howard G. Jensen has been promoted from instructor to assistant professor of accounting in the School of Business Administration of the University of Idaho.

Frederick C. Joerg has been promoted to associate professor of economics at Duke University.

Jesse B. Johnson, formerly of the University of Wyoming, has been appointed associate professor of business administration at Louisiana State University.

John L. Johnson has been named research associate at the University of Kentucky Bureau of Business Research.

Fred M. Jones has been promoted from associate professor to professor of marketing in the College of Commerce and Business Administration of the University of Illinois.

Carey B. Joynt has been appointed assistant professor in the department of international relations at Lehigh University.

Clyde M. Kahler has been promoted to professor of insurance and has been named director of the Graduate Division of the Wharton School of Finance and Commerce.

Alfred E. Kahn, one leave from Cornell University in the current year, is at the Brookings Institution.

Lewis E. Knollmeyer, of the University of Vermont, has been recalled to duty in the United States Air Force.

Reuben H. Krolick has been promoted from instructor to assistant professor of economics in the School of Business Administration of the University of Idaho.

Herman E. Krooss, formerly in the department of economics, has been appointed associate professor in the Graduate School of Business Administration and the School of Commerce, New York University.

Ernest Kurnow has been promoted from instructor to assistant professor in the department of economics, School of Commerce, Accounts, and Finance, New York University.

Robert J. Lampman has been granted leave of absence from the University of Washington to accept an appointment at the American College in Beirut, Lebanon, under the Point Four Technical Assistance Program.

Leonard A. Lecht, of the University of Texas, has received a grant from the Ford Foundation for special study during the current academic year.

Simeon E. Leland, of Northwestern University, attended the Technical Assistants' Conference on Comparative Fiscal Administration held in Geneva under the auspices of the United Nations.

J. M. Letiche has been granted leave from the University of California to accept a Department of State appointment as visiting professor of economics at the University of Aarhus, Denmark.

Agnes Liang has been appointed instructor in economics at the Catholic University of America.

James B. Ludtke has been appointed instructor in business administration at the University of Massachusetts.

Thomas P. Lynch has been appointed research associate in the Bureau of Business Research, University of Kentucky.

Keith E. MacEachron has been appointed instructor in commerce in the School of Business Administration, University of Pittsburgh.

Fritz Machlup, of The Johns Hopkins University, participated in the International Seminars of the Austrian College held at Alpbach in the Tyrol in the past summer.

Shelley M. Mark, of the University of Washington, has accepted the position of territorial economist with the Office of Price Stabilization, Honolulu, Hawaii and is special lecturer in economics at the University of Hawaii.

Charles E. Marshall has been promoted from assistant professor to associate professor of marketing at the University of Idaho.

James W. Martin, who has been serving as fiscal management consultant to the Turkish Ministry of Finance, has resumed his work as director of the University of Kentucky Bureau of Business Research.

Daniel Marx, Jr., has resumed teaching at Dartmouth College after a term with the Economic Cooperation Administration in Paris followed by a year's residence at the Institute for Advanced Study in Princeton.

C. A. Matthews, on military leave of absence from the University of Florida, is teaching at the United States Naval Academy.

Gordon L. Mattson has resigned as assistant professor of business organization and management in the College of Business Administration at the University of Nebraska to become an industrial consultant in Lincoln, Nebraska.

Kenneth H. McCartney, formerly of the University of Minnesota, has joined the faculty of McMaster University.

Walter J. Mead, formerly Carnegie fellow in economics at the University of Oregon, has been appointed assistant professor of economics at Lewis and Clark College.

Robert I. Mehr has been promoted from associate professor to professor of economics at the University of Illinois.

Norman A. Mercer has been appointed lecturer in economics in the School of Business Administration and College of Arts and Sciences, University of Buffalo.

Frederic Meyers has resigned from the University of Texas to accept a position in the University of Illinois Institute of Labor and Industrial Relations.

H. H. Mitchell has been appointed assistant professor of economics at Alabama Polytechnic Institute.

James A. Morris has been promoted to associate professor of economics at the University of South Carolina.

Frederick W. Morrissey has resigned from the College of Business Administration of the University of Nebraska to accept an appointment with the Office of Price Stabilization in Seattle, Washington.

James J. Mullen has been appointed assistant professor of business organization and management in the College of Business Administration of the University of Nebraska.

Grady Mullennix has resigned from the University of Texas to accept a position as Supervisory Industrial Relations Analyst with the Wage Stabilization Board in Denver.

Mary E. Murphy, formerly of Hunter College, has joined the staff of the Los Angeles State College of Applied Arts and Sciences.

Eastin Nelson has been promoted to professor of economics at the University of Texas.

Douglass C. North has been appointed assistant professor of economics at the University of Washington.

Warren G. Nutter has been granted a leave from Yale University to serve with the Central Intelligence Agency.

Walter G. O'Donnell has been appointed associate professor of industry in the School of Business Administration, University of Pittsburgh.

Colin I. Park has been promoted to assistant professor of accounting in the School of Business Administration, University of Buffalo.

Lawrence Pasel, formerly head of the department of economics at Illinois College, is now assistant professor of economics at the University of Idaho.

W. Nelson Peach has been changed in status from professor of finance to professor of economics at the University of Oklahoma.

Wallace C. Peterson has been appointed instructor in economics in the College of Business Administration, University of Nebraska.

George S. Petras has resigned from the University of Georgia to accept a position as labor economist with the Wage and Hour and Public Contracts Divisions of the Department of Labor.

Robert B. Pettengill has resigned as director of the Teaching Institute of Economics at the University of Southern California to become director of Discussion Research for the Fund for Adult Education, an affiliate of the Ford Foundation.

John K. Pfahl is instructor in finance and marketing at The Ohio State University.

Murray E. Polakoff has accepted an appointment as assistant professor of economics at the University of Texas.

Wendell P. Raine, who retired from the Wharton School of Finance as professor emeritus in June 1951, has accepted an appointment as professor of law in the School of Business Administration of the University of Miami.

Irving I. Raines, formerly of the University of Illinois, has been appointed associate professor of marketing and advertising, College of Business and Public Administration, University of Maryland.

Ernest W. Randa has been appointed acting assistant professor at the University of Washington.

Robert S. Raymond has been appointed assistant professor of marketing at the Washington State College.

Robert A. Rennie has been appointed director of research for the Farm Bureau Insurance Companies of Columbus, Ohio.

Edwin P. Reubens has recently been appointed associate director of the Southeast Asia Program at Cornell University and has been granted leave for three semesters to do research and field work under a grant from the Cornell Social Science Research Center.

Frederick G. Reuss has been promoted from associate professor to professor of economics at Goucher College.

Marshall A. Robinson, on leave from Tulane University, is serving as research associate on the staff of the National Bureau of Economic Research.

Franklin R. Root has been promoted from instructor to assistant professor of economics in the College of Business and Public Administration, University of Maryland.

Marvin E. Rozen has been appointed acting assistant professor of economics at the University of Washington.

William J. Ryan has been appointed instructor in economics in the Graduate School of Social Science, Catholic University of America.

Lester C. Sartorius has been appointed assistant professor of economics at the University of Illinois.

Lloyd Saville has been promoted to associate professor of economics at Duke University.

Edwin K. Schempp has been appointed assistant professor of business administration at the University of Massachusetts.

William E. Schenk has resigned from the Agricultural and Mechanical College of Texas to accept an appointment with the Institute of American Affairs.

Hans St. Schloss has entered the German Foreign Office as chief of the economic department of the legation at Belgrade, Yugoslavia.

Edward B. Schmidt has been promoted from associate professor to professor of economics in the College of Business Administration of the University of Nebraska.

Francis H. Schott, of Princeton University, has accepted a position with the Federal Reserve Bank of New York.

Malcolm F. Severance has been appointed instructor in economics at the University of Vermont.

Harold A. Shapiro has accepted a position as assistant professor of economics at the University of Texas.

Gordon Shillinglaw has been appointed assistant professor of economics at Hamilton College.

Joseph Shister has been promoted to professor of industrial relations in the School of Business Administration of the University of Buffalo.

Carl S. Shoup, as president, attended the Conference of the International Institute of Public Finance in London in September.

John A. Shubin has been promoted to assistant professor in the department of economics, School of Commerce, Accounts, and Finance, New York University.

Allen Sievers has resigned as associate professor of business administration at the University of Massachusetts.

Leonard C. Silk has been granted leave from the Division of Housing Research, Housing and Home Finance Agency, to accept a Fulbright award for research in Norway.

Rollin H. Simonds has been promoted from associate professor to professor of business at Michigan State College.

Gerald Sirkin has been appointed instructor in economics at Yale University.

Douglas Snider has been appointed instructor in management and assistant director of the Bureau of Personnel Relations and Placement, School of Business, Indiana University.

Beryl W. Sprinkel has been appointed instructor in business administration in the School of Business, University of Chicago.

J. A. Stockfisch has been appointed assistant professor of economics at Occidental College for the current academic year.

S. Styholt has been appointed lecturer in economics in the Institute of Business Administration, University of Toronto.

Sidney Sufrin, of Syracuse University, is serving as head of an economic mission to Spain under the auspices of the Economic Cooperation Administration.

J. Wilmer Sundelson has been granted a leave by the International Division of the Ford Motor Company to serve as consultant to the special representative in Europe of the Economic Cooperation Administration.

George Suzuki, formerly of the University of Minnesota, has joined the staff of the Planning Research Division of the United States Air Force in Washington, D.C.

V. V. Sweeney has been promoted from associate professor to professor of insurance at the University of Florida.

Ralph Swick has been appointed faculty lecturer in accounting at Indiana University.

Robert Tannenbaum has been promoted to associate professor of personnel management and industrial relations in the School of Business Administration, University of California at Los Angeles.

Milton C. Taylor has been appointed lecturer in the School of Public Administration, University of Puerto Rico.

Perry D. Teitelbaum, formerly of Union College and Illinois Institute of Technology, has joined the Bureau of Labor Statistics as an economist.

Ralph Thayer has been promoted from associate professor to professor of economics at State College of Washington.

K. M. Thompson has been appointed assistant professor of economics at Louisiana State University.

W. H. Thompson has been promoted from associate professor to professor of industrial economics at Iowa State College.

Peter R. Toscano has been appointed instructor in economics at the University of Connecticut.

Robert Triffin has been appointed professor of economics at Yale University.

VACANCIES AND APPLICATIONS

The Association is glad to render service to applicants who wish to make known their availability for positions in the field of economics and to administrative officers of colleges and universities and to others who are seeking to fill vacancies.

The officers of the Association take no responsibility for making a selection among the applicants or following up the results. The Secretary's Office will merely afford a central point for clearing inquiries; and the *Review* will publish in this section brief description of vacancies announced and of applications submitted (with necessary editorial changes). Since the Association has no other way of knowing whether or not this section is performing a real service, the Secretary would appreciate receiving notification of appointments made as a result of these announcements. It is optional with those submitting such announcements to publish name and address or to use a key number. Deadlines for the four issues of the *Review* are February 1, May 1, August 1, and November 1.

Communications should be addressed to: The Secretary, American Economic Association, Northwestern University, Evanston, Illinois.

Vacancies

Investment counsel: For our investment counsel work, we would like to hire a man of outstanding intellectual ability to be trained in the study of investment opportunities and in the valuation of investment securities. The only requirements are that he should have a degree in economics, statistics, or finance and he should have a university record ranking him in the top 10 per cent of his class. A lady might be considered for this work if she were outstanding. However, it is desirable, also, that the man should have some experience in the purchase and sale of stocks and bonds and that he should be exempt from call for military service. Templeton, Dobbrow & Vance, Inc., 30 Rockefeller Plaza, New York 20, N.Y.

Labor and government regulation: Ph.D. in economics and business, with special interest in labor and government regulation, wanted for senior position in department of business and economics of small Midwestern university.

Economists Available for Positions

International economics, money and banking, government and business, labor and industrial relations, theory, history of economic thought: Man, 36, married, B.A., M.A., Ph.D., Columbia University. Five years of top level research with the U.S. Government, including FEA and State Department; 6 years of college teaching, including graduate courses; consultant to Puerto Rican Government, 2 consulting engineering firms, and a Congressional committee; has written 4 books and has 3 others in progress and under contract with publishers. Now employed in private industry; wishes to return to academic life or government research. E243

Advertising, marketing, salesmanship, retailing, merchandising, small business operation, business psychology: Woman, 34, married, M.S., New York University, School of Retailing, working towards Ph.D. Six years as copy writer and sales manager with leading department stores and mail order houses; 2 years of college teaching in field; 2 years in government. Presently associated with advertising agency but desires return to academic life. Available in February or September, 1952 E254

Economic theory, history of economic thought, business cycles, capital and labor problems, international trade, comparative economic systems: Man, 45, European, three German degrees, including doctor's. Fifteen years of university teaching experience; original contribution to the theory of economics; author of several works in three languages; excellent criticisms and recommendations from many university professors. Wishes position in economics. E317

Economic principles, thought, labor problems, management, marketing, investments: Man, 38, married, Ph.D. course requirements completed and dissertation in progress. Currently teaching at small Eastern college. Desires teaching position outside New York City. Available in September, 1952. E318

Public finance (including fiscal policy), money and banking, corporation finance, international commercial and economic policies, general economics: Man, married, Ph.D., LL.D. Extensive experience in teaching, research, and local, state, and national government service, retiring from well-known American university. Lecturing in foreign university, 1951-52. Available in September, 1952. E385

Economic structure of modern China, Chinese-Russian trade relations, economic development of Russian Far East and Central Asia: Man, 47, Ph.D., Berlin University. Taught 13 years at Yenching University and 4 years at a large Eastern university. Substantial research work in the field. Desires teaching, research, or advisory position. E392

Economic theory, history of economic thought, accounting, finance: Man, 40, married, M.B.A., candidate for Ph.D., New York University, C.P.A. Partner in New York firm. Seeks summer teaching position. E393

Economic theory and principles, labor economics, business cycles, history of economic thought, money and banking, corporation finance: Man, 27, B.S., M.A., Ph.D. residence completed at a large Eastern university. Two years of teaching experience. Available in January, 1952. E394

Economics, economic history, geography: Man, 33, British, permanent U.S. visa, B.A., M.A., Cambridge University, B.Com., B.Sc.Econ., M.Sc., Ph.D. thesis in process, University of London; work in political science, University of Chicago. Undergraduate, graduate, and adult teaching experience, United States, Britain, and Germany; 7 years in British Army and R.A.F.; Cambridge scholarship holder; familiar with British, Irish, French, and Belgian economies; international public speaking; currently assistant professor of history; résumé supplied on request. Seeks U.S. or Canadian business, research bureau, or teaching offer. Available immediately. E395

Labor economics, industrial pensions, social security, insurance, statistics, industrial relations, social legislation, elementary economics: Man, 34, married, Ph.D. Four years of experience in research and teaching; desires industrial pensions specialist, teaching, research, or statistical analyst position. E396

Economic theory, money and banking, international economics, statistics, economic thought, welfare economics, investments, economics of industry: Man, 28, B.A. (Cantab.), M.A., University of California. Industrial and business experience. Seeks research or teaching position. E397

Insurance, international economics, foreign trade, economic history, business law, marketing, investments: Man, 44, Ph.D. Associate professor, college near Los Angeles; also University of California. Practical experience in insurance and foreign trade. Available for academic appointment, East or West Coast. September, 1952. E398

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The Association will pay fifty cents a copy for the following issues (sent prepaid and in good condition) of the *American Economic Review:* September, 1941; May, 1946; May, 1948; March, 1947; March, June, 1949.

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